

## UTAH OIL AND GAS CONSERVATION COMMISSION

REMARKS: WELL LOG \_\_\_\_\_ ELECTRIC LOGS ☒ X WATER SANDS \_\_\_\_\_ LOCATION INSPECTED \_\_\_\_\_ SUB. REPORT/abd \_\_\_\_\_

DATE FILED 3-27-87

LAND: FEE &amp; PATENTED

STATE LEASE NO.

PUBLIC LEASE NO. U-52333

INDIAN

DRILLING APPROVED: 5-12-87

SPUDDED IN: 6-1-87

COMPLETED: 7-22-87 510W PUT TO PRODUCING:

INITIAL PRODUCTION: 850 BWPD

GRAVITY A.P.I.

GOR:

PRODUCING ZONES: 5556-5614 Jerry

TOTAL DEPTH: 5849'

WELL ELEVATION: 4867' GL

DATE ABANDONED:

FIELD: KIVA

UNIT:

COUNTY: SAN JUAN

WELL NO. NAVAJO FEDERAL 14-4

API NO. 43-037-31321

LOCATION 1150 FSL FT. FROM (N) (S) LINE.

1110 FWL

FT. FROM (E) (W) LINE.

SWSW

1/4 - 1/4 SEC.

4

TWP.	RGE.	SEC.	OPERATOR	TWP.	RGE.	SEC.	OPERATOR
39S	25E	4	MERIDIAN OIL INC.				

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Budget Bureau No. 42-R356.2  
Approval expires 11-30-49.

LAND OFFICE Salt Lake City  
LEASE NUMBER 067802  
UNIT

# LESSEE'S MONTHLY REPORT OF OPERATIONS

State Utah County San Juan Field Hatch - Wildcat

The following is a correct report of operations and production (including drilling and producing wells) for the month of January, 1952,

Agent's address P.O. Box 371 Company Hathaway  
Santa Fe Springs, Calif.

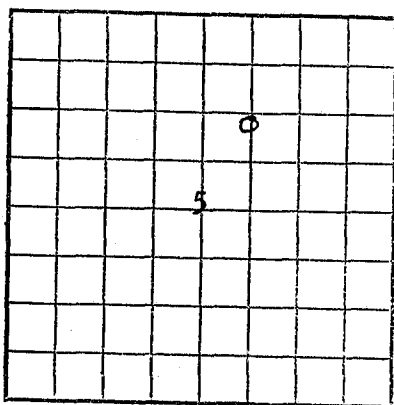
Phone Oxford 65713 Signed [Signature] Agent's title President

SEC. AND 1/4 OF 1/4	TWP.	RANGE	WELL No.	DAYS PRODUCED	BARRELS OF OIL	GRAVITY	CU. FT. OF GAS (In thousands)	GALLONS OF GASOLINE RECOVERED	BARRELS OF WATER (If none, so state)	REMARKS (If drilling, depth; if shut down, cause; date and result of test for gasoline content of gas)
REPORT OF DRILLING OPERATIONS ON HATHAWAY-GLASCO FEDERAL NO. 1B FOR THE MONTH OF JANUARY, 1952										
										We drilled ahead and reached a total depth of 7621'.
										We encountered the top of the Mississippi at 7410' and the top of the Devonian at 7590'. The Mississippi had salt water in it. <i>Devonian in</i>
										On January 14, 1952 we filed intention to pull casing and abandon the well. <i>permitted</i>
										1/21/52 - We shot the 8 5/8" casing at 2493'.
										1/22/52 - We pulled 2493' of 8 5/8" casing.
										1/23/52 - Pumped in a 25 sack cement plug at 4575'.
										Pumped in a 50 sack cement plug at 2493'.
										1/24/52 - Pumped in a 75 sack cement plug at 1412'.
										1/26/52 - Located top plug at 1335'.
										We have shut down completely due to weather conditions and have left our equipment with a watchman at the well location.
										We swedged the top of the 11 3/4" casing and installed a valve.
										When the final disposition of the well either as a water well or otherwise is settled we will file our "Subsequent Report of Abandonment" on form 9-331a.
										Statement regarding fresh water
										After running 11 3/4" J55 47# casing to 533' and cementing on outside with 125 sacks cement the rotary crew encountered fresh water flow from 630' to 662'. Additional water flow was encountered from this depth on down to approximately 1300'. The well will flow 600 barrels of water and the pressure is 200 lbs. The fresh water is shut off from the lower stratas with the cement plug set at 1412' top of which is at 1335'.

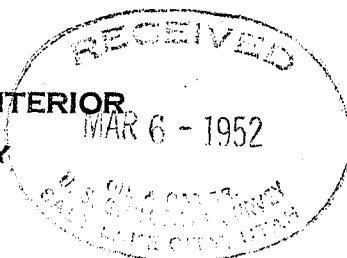
Formation logs will be submitted as soon as completed.

NOTE.—There were no runs or sales of oil; no M. cu. ft. of gas sold;  
no runs or sales of gasoline during the month. (Write "no" where applicable.)

NOTE.—Report on this form is required for each calendar month, regardless of the status of operations, and must be filed in duplicate with the supervisor by the 6th of the succeeding month, unless otherwise directed by the supervisor.



LOCATE WELL CORRECTLY

U. S. LAND OFFICE Salt Lake City  
SERIAL NUMBER 067802  
LEASE OR PERMIT TO PROSPECTUNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

## LOG OF OIL OR GAS WELL

Company Hathaway and Glasco Address Box 371, Santa Fe Springs, California  
Lessor or Tract \_\_\_\_\_ Field Hatch State Utah  
Well No. 1-B Sec. 5 T. 39 S R. 25 E Meridian S. L. County San Juan  
Location 1725 ft. N. of N. Line and 2005 ft. E. of E. Line of sec. 5 Elevation 4766  
(Denote floor relative to sea level)

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Signed [Signature]  
Title Vice-President

Date March 4, 1952

The summary on this page is for the condition of the well at above date.

Commenced drilling Aug. 24, 1951 Finished drilling January 16, 1952

## OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from \_\_\_\_\_ to \_\_\_\_\_ No. 4, from \_\_\_\_\_ to \_\_\_\_\_  
No. 2, from \_\_\_\_\_ to \_\_\_\_\_ No. 5, from \_\_\_\_\_ to \_\_\_\_\_  
No. 3, from \_\_\_\_\_ to \_\_\_\_\_ No. 6, from \_\_\_\_\_ to \_\_\_\_\_

## IMPORTANT WATER SANDS

No. 1, from 630' to 662' No. 3, from \_\_\_\_\_ to \_\_\_\_\_  
No. 2, from \_\_\_\_\_ to \_\_\_\_\_ No. 4, from \_\_\_\_\_ to \_\_\_\_\_

## CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated		Purpose
							From—	To—	
11 3/4" 47"		8thd	J55	526'	Guide				Surface
If the well has been drilled and the casing is to be run, the casing should be run to the bottom of the hole and the casing should be cemented to the bottom of the hole. If the well has been drilled and the casing is to be run, the casing should be run to the bottom of the hole and the casing should be cemented to the bottom of the hole.									
8 5/8" 32"		8 thd.	J55	4574'	Float	2493'			Water Shut

## MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
11 3/4" 526'		375	Halliburton		
8 5/8" 4574'		500	"		

## PLUGS AND ADAPTERS

Heaving plug—Material \_\_\_\_\_ Length \_\_\_\_\_ Depth set \_\_\_\_\_  
Adapters—Material \_\_\_\_\_ Size \_\_\_\_\_

## SHOOTING RECORD

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out

## TOOLS USED

Rotary tools were used from 523 feet to 7621 feet, and from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
Cable tools were used from 0 feet to 523 feet, and from \_\_\_\_\_ feet to \_\_\_\_\_ feet

## DATES

\_\_\_\_\_, 19\_\_\_\_ Put to producing \_\_\_\_\_, 19\_\_\_\_

The production for the first 24 hours was \_\_\_\_\_ barrels of fluid of which \_\_\_\_\_ % was oil; \_\_\_\_\_ % emulsion; \_\_\_\_\_ % water; and \_\_\_\_\_ % sediment. Gravity, °Bé. \_\_\_\_\_

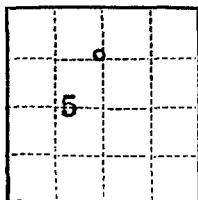
If gas well, cu. ft. per 24 hours \_\_\_\_\_ Gallons gasoline per 1,000 cu. ft. of gas \_\_\_\_\_

Rock pressure, lbs. per sq. in. \_\_\_\_\_

(SUBMIT IN TRIPLICATE)

Land Office Salt Lake CityLease No. 067802

Unit \_\_\_\_\_

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
ORIGINAL FORWARDED TO CASPER

FEB 26 1953

## SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL.....	SUBSEQUENT REPORT OF WATER SHUT-OFF.....	
NOTICE OF INTENTION TO CHANGE PLANS.....	SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING.....	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.....	SUBSEQUENT REPORT OF ALTERING CASING.....	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL.....	SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR.....	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE.....	SUBSEQUENT REPORT OF ABANDONMENT.....	X
NOTICE OF INTENTION TO PULL OR ALTER CASING.....	SUPPLEMENTARY WELL HISTORY.....	
NOTICE OF INTENTION TO ABANDON WELL.....		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

February 18, 1953

Well No. 1-B is located 1725 ft. from N line and 2005 ft. from Ex line of sec. 5  
SW 1/4 NE 1/4 5 39 S. 25 E. S.L.  
(1/4 Sec. and Sec. No.) (Twp.) (Range) (Meridian)  
Hatch Wildcat San Juan Utah  
(Field) (County or Subdivision) (State or Territory)

The elevation of the derrick floor above sea level is 4766 ft.

## DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Circulated 11# mud from T.D. 7621'.  
Shot and pulled 8 5/8" casing from 2493'. Pumped in 25 sx. cement plug at 4575', shoe of 8 5/8" casing. Pumped in 50 sx. cement plug at 2493'. Pumped in 75 sx. cement plug at 1412' - 1335'. 11 3/4" casing swedged down and 4" size valve installed. for completion as water well.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Hathaway Company, and GlascoAddress Santa Fe Springs, California.Approved MAY 1 - 1953(Orig. Sgd.) H. G. Seoville

District Engineer

By J. HathawayTitle Vice-President



BEFORE THE DIVISION OF OIL, GAS AND MINING  
DEPARTMENT OF NATURAL RESOURCES  
STATE OF UTAH

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IN THE MATTER OF THE APPLICATION :  
OF MERIDIAN OIL INC. FOR :  
ADMINISTRATIVE APPROVAL :  
FOR CLASS II INJECTION WELLS : CAUSE NO. UIC-094  
LOCATED IN SECTIONS 4, 5, & 9, :  
TOWNSHIP 39 SOUTH, RANGE 25 EAST, :  
S.L.M., SAN JUAN COUNTY, UTAH. :

---oo0oo---

THE STATE OF UTAH TO ALL INTERESTED PARTIES IN THE ABOVE ENTITLED  
MATTER.

Notice is hereby given that Meridian Oil Inc., has requested  
administrative approval from the Division to convert the following  
wells to enhanced recovery water injection wells:

KIVA FIELD - San Juan County, Utah

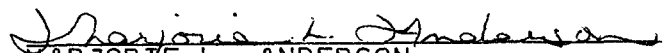
Navajo-Federal #14-4  
Navajo-Federal #43-5  
Navajo-Federal #21-9

INJECTION INTERVAL: Paradox Formation 5450'-5650'  
MAXIMUM SURFACE PRESSURE: 3740 psig  
MAXIMUM WATER INJECTION RATE: 5000 BWPD

Conditional approval of this application will be granted, by the  
Division subject to project approval by the Board of Oil, Gas and  
Mining, unless objections are filed with the Division of Oil, Gas and  
Mining within fifteen days after publication of this Notice.  
Objections, if any, should be mailed to the Division of Oil, Gas and  
Mining, Attention: UIC Program Manager, 3 Triad Center, Suite 350, 355  
West North Temple, Salt Lake City, Utah 84180-1203.

DATED this 23rd day of March, 1987.

STATE OF UTAH  
DIVISION OF OIL, GAS AND MINING

  
MARJORIE L. ANDERSON  
Administrative Assistant

## STATE ACTIONS

Mail to:  
Grants Coordinator  
State Clearinghouse  
116 State Capitol, SLC, Ut. 84114  
533-4971

1. Administering State Agency STATE OF UTAH NATURAL RESOURCES OIL, GAS, & MINING 3 TRIAD CENTER SUITE 350 SALT LAKE CITY, UTAH 84180-1203		2. State Application Identifier Number: (assigned by State Clearinghouse)	
		3. Approximate date project will start: April 23, 1987.	
4. Areawide clearinghouse(s) receiving State Action: (to be sent out by agency in block 1) SOUTHEASTERN UTAH ASSOCIATION OF LOCAL GOVERNMENTS ATTN: BILL HOWELLS PO BOX 1106, PRICE, UTAH 84501-0881			
5. Type of action: <input type="checkbox"/> Lease <input checked="" type="checkbox"/> Permit <input type="checkbox"/> License <input type="checkbox"/> Land Aquisition <input type="checkbox"/> Land Sale <input type="checkbox"/> Land Exchange <input type="checkbox"/> Other			
6. Title of proposed action: KIVA FIELD ENHANCED RECOVERY PROJECT			
7. Description: APPROVAL FOR POSSIBLE CONVERSION OF THREE WELLS TO WATER INJECTION WELLS FOR THE PURPOSE OF ENHANCED RECOVERY.			
8. Land affected (site location map required) (indicate county) SECTIONS 4,5,9, in Township 39 South, Range 25 East, S.L.M., SAN JUAN COUNTY, UTAH			
9. Has the local government(s) been contacted? YES			
10. Possible significant impacts likely to occur: NONE			
11. Name and phone number of district representative from your agency near project site, if applicable: N/A			
12. For further information, contact:  Phone: GIL HUNT 538-5340		13. Signature and title of authorized officer Date: <i>Phil [Signature]</i> 3/31/87 UIC Manager	

Summary of Review for Meridian Oil Inc.  
proposed injection wells.

- ① Chemical Analysis of makeup water and produced water is needed.
- ② A compatibility test of fluid is needed.
- ③ Step Rate test or other fracture data is needed to approve requested rates and pressures.
- ④ M.I.T. shall be run on completion of each well.
- ⑤ Attachment # 1 shows schematic of proposed wellbore for the NAVAJO Federal 43-5 and the existing wellbore for the Hathaway Glasco # 1-B. Attachment # 2 shows the proximity of the 2 above mentioned wells.
- ⑥ All other wells in area appear to have good mechanical integrity.

R 25 E

U-57895

U-52333

Proposed Waterflood Unit Boundary

U-58728

Hathaway

MOI 42-5

MOI 43-5

MOI 4-4

MOI 23-4

MOI 14-4

MOI 4-1

MOI 4-2

MOI 21-9

MOI 9-1

MOI 9-2

MOI 42-9

T 39 S

MERIDIAN OIL

KIVA FIELD  
SAN JUAN COUNTY, UTAH

U-XXXXX FEDERAL LEASE UNIT NUMBER

----- FEDERAL ACREAGE CONTAINED  
IN PROPOSED UNIT

Attachment #2

Operator

Meridian Oil Co.

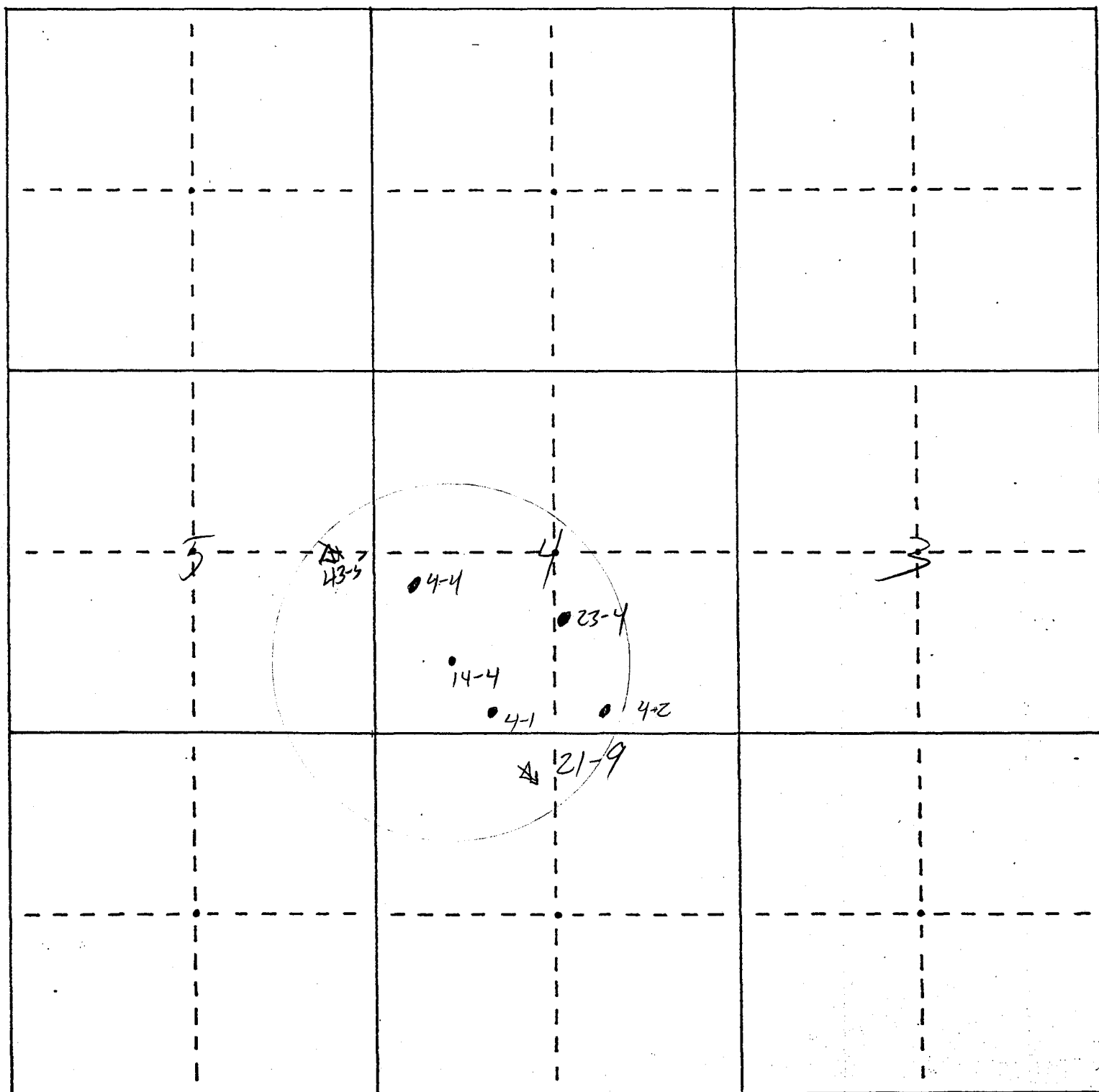
Well

14-4 Navajo Federal

Location

Sec 4, 39S, 25E

San Juan County, Utah



# UIC CHECKLIST FOR APPLICATION APPROVAL

OPERATOR Meridian O. / WELL NUMBER 14-4  
 SEC. 4 T. 39S R. 25E COUNTY San Juan  
 API # \_\_\_\_\_

NEW WELL ☒ DISPOSAL WELL \_\_\_\_\_ ENHANCED RECOVERY WELL ☒

- Plat showing surface ownership	Yes <input checked="" type="checkbox"/>	No _____
- Application forms complete	Yes <input checked="" type="checkbox"/>	No _____
- Schematic of well bore	Yes <input checked="" type="checkbox"/>	No _____
- Adequate geologic information	Yes <input checked="" type="checkbox"/>	No _____
- Rate and Pressure information	Yes _____	No <input checked="" type="checkbox"/>
- Fluid source	Yes <input checked="" type="checkbox"/>	No _____
- Analysis of formation fluid	Yes _____	No <input checked="" type="checkbox"/>
- Analysis of injection fluid	Yes _____	No <input checked="" type="checkbox"/>
- USDW information	Yes <input checked="" type="checkbox"/>	No _____
- Mechanical integrity test	Yes _____	No <input checked="" type="checkbox"/>

Comments: 5 producers and 2 proposed injectors  
in area of review. Fluid analysis needed  
step rate test & bbr rep. MIT  
will be done when well is completed.

Reviewed by Dan J. J. J.

HATHAWAY COMPANY

#1-X GLASCO

H-G F F I B

Sec. 5 - 39S - 25E.

1700' fr. N/L 2055' fr. E/L

San Juan County, Utah

Elev. D.F. 4764'  
Gnd. 4756'

Spud: 8/24/51  
Complete: 1/16/52  
Status: D & A.  
Casing: 16" at 65'  
11-3/4" at 526' w/375  
8-5/8" at 4574' w/500 sx.

T.D. 7621'

Logged: February 1952 by R. R. Smart,  
Geologist - General Petroleum Corp.

<u>Formation</u>	<u>Sample Tops</u>	<u>Electric Log (Lane-Wells)</u>
Morrison	Surface	
Entrada	252'	252
Carmel	No Pick	530
Navajo	No Pick	555
Kayenta	No Pick	690
Wingate	740?	738
Chinle	1090?	1120
Shinarump	2350	2370
Moenkopi	2510	2485
Cutler	No Pick	No Pick
Rico	4550?	4538
Hermosa	4625	4610
Paradox 1st Blk. Sh.	5340 (poor pick)	5332
Anhydrite	5420	5405
Top Salt	5770	5765
Bottom Salt	6925	6925
Molas	7354	7354
Leadville	7464	7455

DST: 5630-5730'

Open 1-1/2 hours; weak to steady blow air for 33 minutes and died.  
Recovered 45' very slightly gas cut mud. Flow Pressure 90#.  
Shut In Pressure 150# in 30 minutes. Hydro Pressure 2800#.

GLASCO #1-X

<u>Depth</u>	<u>Interval</u>	<u>Description</u>
100	100	No Samples.
150	50	<u>Sandstone</u> , white, fine to medium, calcareous, quartzose
180	30	<u>Shale</u> , variegated red and gray-green, very sandy.
200	20	<u>Sandstone</u> , brown red, very fine to fine, silty.
220	20	<u>Sandstone</u> , buff, fine to medium, friable.
248	28	<u>Siltstone</u> , red mottled with white, massive, somewhat sandy. Limestone fragments.
252	4	<u>Sandstone</u> , white with buff tinge, fine to medium, good porosity, slightly calcareous, sub-round to sub-angular quartzose. Trace Anhydrite, white, granular.
<u>Top Entrada at 252' - R.R.S.</u>		
306	54	<u>Sandstone</u> , red buff, fine to medium, good porosity, sub-round to sub-angular, quartzose, friable.
335	29	<u>Sandstone</u> , red buff as above.
340	5	<u>Sandstone</u> , gray, fine, tight.
350	10	<u>Sandstone</u> , buff, fine to medium, with some coarse. Irregular grain shape.
500	150	<u>Sandstone</u> , reddish buff, fine to medium, quartzose, sub-rounded, frosted grains. Trace of white granular Anhydrite.
522	22	<u>Sandstone</u> , as above.
660	108	No Samples.
690	30	<u>Sandstone</u> , white, medium, sub-round, slightly calcareous. Trace Anhydrite. Quartzose.
700	10	<u>Sandstone</u> , as above - color buff.
740*	40	<u>Sandstone</u> , reddish brown, fine to medium, sub-round, frosted grains, quartzose. Disseminated granules round, grains of white quartz. Pyrite crystals. Trace anhydrite throughout. Somewhat shaley.
750	10	<u>Sandstone</u> , white, fine, calcareous. Anhydrite.
840	90	<u>Sandstone</u> , buff, fine with some medium. Color white by 770'. Scattered traces of white anhydrite.
910	70	<u>Sandstone</u> , red buff, fine, as above. Some Anhydrite.
920	10	<u>Sandstone</u> , as above. Color buff.
970	50	<u>Sandstone</u> , red buff, fine with some medium.
1000	30	<u>Shale</u> , red, sandy in part.
1010	10	<u>Sandstone</u> , dark red, shaley, fine with some medium.
1020	10	<u>Shale</u> , purple red, fissile.
1030	10	<u>Sandstone</u> , mottled white and red buff, fine to medium.
1090	60	<u>Sandstone</u> , red, fine to medium, trace Anhydrite.

\* Top Wingate at 740' - R.R.S.



GLASCO #1-X

<u>Depth</u>	<u>Interval</u>	<u>Description</u>
<u>Possible Top Chinle at 1090'</u>		
1180	90	<u>Sandstone</u> , white with red cast, fine to medium, calcareous, quartzose. Color becomes redder by 1160-70' with trace red shale. Considerable anhydrite throughout.
1230	50	<u>Sandstone</u> , reddish brown, fine, shaley in part.
1260	30	<u>Sandstone</u> , buff, fine to medium.
1400	140	<u>Sandstone</u> , as above. Color red brown. Trace red shale 1290-1300'. Trace white anhydrite.
1450	50	<u>Sandstone</u> , buff to slight red, fine to medium with trace of red shale.
1470	20	<u>Sandstone</u> , buff, medium, friable.
1600	130	<u>Sandstone</u> , red brown, very fine to fine, somewhat silty. Mottled with light tan, hard.
1700	100	<u>Sandstone</u> , dark red brown. Very fine to fine, silty, mottled in part with light gray, hard, calcareous.
1800	100	<u>Sandstone</u> , dark red brown, very fine to fine, silty, mottled with gray. Fragments of green sandstone. Calcareous.
1840	40	<u>Sandstone</u> , dark red brown, very fine to fine, mottled red calcareous fragments.
1850	10	<u>Sandstone</u> , as above with considerable red shale.
1900	50	<u>Shale</u> , red, fissile, mottled scattered anhydrite, white, granular.
1920	20	<u>Sandstone</u> , red brown, silty, very fine to fine.
1960	40	<u>Shale</u> , red, fissile with crystals of white quartz. Some light colored mottling, very slightly calcareous.
1990	30	<u>Sandstone</u> , light lavender red, fine to medium, calcareous. Dark red shale partings.
2110	120	<u>Shale</u> , red brown, fissile, somewhat sandy, minute veins calcite. Secondary origin. Traces of highly calcareous red material. Not sufficiently limey to be limestone. Interbedded with sandstone, tan, very fine 2050-2060'.
2150	40	<u>Shale</u> , mottled red and white, silty. Minute fractures filled with dark purple red material (shale).
2190	40	<u>Siltstone</u> , red, massive. Some gray green mottling. Trace of white granular sandstone 2170-80'.
2240	50	<u>Sandstone</u> , pink red, very fine to fine, silty. Calcareous. Scattered granules of quartz.
2250	10	<u>Limestone</u> , white and red mottled, dense to finely crystalline.
2280	30	<u>Sandstone</u> , red brown, very fine to fine.
2300	10	<u>Shale</u> , mottled pink and white. Fragments of sandstone scattered throughout.

GLASCO #1-X

<u>Depth</u>	<u>Interval</u>	<u>Description</u>
2310	10	<u>Sandstone</u> , white with pink cast, fine to medium. Slightly calcareous.
2350	40	<u>Siltstone</u> , brick red, sandy, massive. Trace of white sandstone, disseminated within the red siltstone matrix. Micaceous (Muscovite).
<u>Top Shinarump at 2350' - R.R.S.</u>		
2380	30	<u>Sandstone</u> , grayish white, medium with some coarse, fragments of black fossil wood (chert). Grains sub-angular, some sub-round. Quartzose with minor amount Feldspar.
2405	25	<u>Shale</u> , gray green, fissility poor.
2420	15	<u>Sandstone</u> , gray white. Considerable black chert (some fragments have appearance of fossil wood).
2450	30	<u>Sandstone</u> , gray white, medium to coarse, sub-angular. Few chert fragments. Becomes medium grained by 2440-50'.
2500	50	<u>Sandstone</u> , white, fine to medium, trace Anhydrite. Quartzose with few scattered green crystals. Many coarse grains almost conglomeratic 2480-90'.
2510	10	<u>Sandstone</u> , gray, very fine with coarse quartz grains in the matrix. Mottled somewhat with red.
<u>Top Moenkopi 2510' - R.R.S.</u>		
2560	50	<u>Shale</u> , gray, poor fissility.
2600	40	<u>Shale</u> , red, fissile with some gray. Scattered sandstone, red, coarse.
2620	20	<u>Siltstone</u> , gray, fissile, sandy.
2640	20	<u>Shale</u> , brown, fissile, slickensides.
2670	30	<u>Siltstone</u> , gray, sandy. Pebble grains of quartz, pyritic.
2700	30	<u>Sandstone</u> , brown, fine, micaceous.
2760	60	<u>Siltstone</u> , gray, pebble grains of quartz, slight purple tint.
2800	40	<u>Shale</u> , mottled red and green.
2820	20	<u>Sandstone</u> , gray green, medium grained lens in shale matrix, calcareous.
2850	30	<u>Shale</u> , gray green, sandy in part, coarse quartz grains.
2880	30	<u>Shale</u> , red.
2900	20	<u>Sandstone</u> , brown red, fine to medium.
2920	20	<u>Sandstone</u> , brown red, fine to medium, shaley in part.
2930	10	<u>Siltstone</u> , red, sandy with fragments of gray shale.
3000	70	<u>Shale</u> , gray, silty, large grains of white quartz, mottled with purple. Pyritic.
3030	30	<u>Siltstone</u> , red, very fine to fine, somewhat sandy. Fragments of gray shale.

GLASCO #1-X

<u>Depth</u>	<u>Interval</u>	<u>Description</u>
3070	40	Shale, gray, medium sand grains in the shale matrix.
3120	50	Sandstone, mottled pink and red, fine, micaceous, anhydrite.
3230	110	Shale, gray, fissile. Fragments of pyritized black wood. Slight purple mottling. 3200-10' coarse x-tals of white pink. Fragments of fine red sandstone throughout.
3540	310	Sandstone, red, fine, micaceous, shaley. Several large coarse quartz grains calcareous. Mottled in part with dark brown shale. From 3350-3400' a considerable amount of white quartz has appeared in the samples. Believe it may be cavings. Scattered mica flakes 3440-50'. Pyrite 3480-90'.
3580	40	Sandstone, buff to red, fine to medium, friable.
3700	120	Sandstone, red, fine, shaley. Very faint white mottling. Trace of white sandstone 3610-20'. Large (2 mm.) flakes of Biotite in cuttings. Trace of white flaky Gypsum.
3800	100	Sandstone, silty, red with grayish mottling, fine. Crystals of pure white limestone 3710-20'. Fragments of dark brown shale.
3830	30	Sandstone, buff with some red, fine to medium, appears to be friable.
3880	50	Sandstone, red, fine, silty.
3910	30	Shale, dark brown, fissile, sandy to silty in part.
3950	40	Sandstone, red brown, fine to silty, mottled with gray trace brownish gray limestone 3930-40'.
3960	10	Limestone, brown gray, dense.
4000	40	Shale, dark brown, fissile, slickensides. Some gray mottling becoming very sandy by 4000'.
4100	100	Sandstone, reddish buff - red brown, fine, silty, mica flakes (amber).
4130	30	Sandstone, reddish buff, fine, silty, amber mica, light green mottling. Trace of shale, gray green, limey 4120-30'.
4160	30	Shale, gray green limey, sandy.
4200	40	Sandstone, red, very fine to fine, silty, tight.

The Lane-Wells indicates a very radioactive section 4285-4295'. Samples indicate it was not a shale, but perhaps a sandstone with possible presence of Uranium bearing ore. Samples below 4200 to 4250' have fragments of fossilized wood

4220	20	Sandstone, reddish buff, fine, silty.
4250	30	Shale, gray green, limey.
4300	50	Sandstone, red buff, fine, silty. Large flakes of free mica (Muscovite).
4310	10	Sandstone, reddish buff, fine, silty, some mottling.
4330	20	Shale, gray, very limey.

GLASCO #1-X

<u>Depth</u>	<u>Interval</u>	<u>Description</u>
4410	80	<u>Sandstone</u> , mottled red with white, fine, tight, crystals of pyrite.
4420	10	<u>Limestone</u> , dark gray, dense, shaley.
4500	80	<u>Sandstone</u> , reddish brown, fine, tight, silty.
4550	50	<u>Sandstone</u> , as above with considerable limey gray shale (10%).

Possible Top Rico ? at 4550'

4590	40	<u>Limestone</u> , gray, finely crystalline.
4600	10	<u>Shale</u> , reddish gray, fissile with sandstone, red.
4625	25	No Samples.

Top Hermosa at 4610' (Lane-Wells)

4645	20	<u>Limestone</u> , dark gray, finely crystalline, dense.
4655	10	<u>Limestone</u> , dark and light gray to almost white, dense to finely crystalline. No porosity apparent.
4715	60	<u>Sandstone</u> , brownish white, fine, calcareous.
4760	45	No Samples.
4775	15	<u>Limestone</u> , dark gray, nodular, dense, tight with brown shale.
4780	5	<u>Limestone</u> , gray, dense to some finely crystalline.
4790	10	<u>Limestone</u> , white, granular to dense.
4800	10	<u>Limestone</u> , gray, dark and light, dense to finely crystalline. No porosity.
4820	20	<u>Limestone</u> , brown, very shaley and with sandstone grains.
4900	80	<u>Limestone</u> , dark and light gray, dense to finely crystalline, tight, micaceous. Trace porosity (pin point) 4835-40'.
4963	63	<u>Limestone</u> , gray, dense to finely crystalline, somewhat sandy, micaceous.

Core 4963-5013' Rec. 50'

4963-68	5	<u>Limestone</u> , dark gray, hard, dense to finely crystalline, tight.
4968-73	5	<u>Limestone</u> , dark gray to black, hard, dense to finely crystalline, tight, micaceous, few large crystals Calcite.
4973-93	20	<u>Limestone</u> , dark gray to black, hard, dense to finely crystalline. Scattered pin point porosity. No bedding apparent.
4993-98	5	<u>Limestone</u> , light gray, fine to coarsely crystalline, fossil casts, porosity poor.

GLASCO #1-X

<u>Depth</u>	<u>Interval</u>	<u>Description</u>
<u>Core 4963-5013' (Continued)</u>		
4998-5003	5	<u>Limestone</u> , dark gray, finely crystalline, with irregular sandstone lens, black, fine, tight, calcareous. Limestone has platy appearance.
5003-13	10	<u>Limestone</u> , gray, finely crystalline, fair porosity, micaceous.
<u>Core 5013-5043' Rec. 30'</u>		
5013-18	5	<u>Limestone</u> , gray, finely crystalline, very micaceous, porosity not apparent.
5018-23	5	<u>Limestone</u> , shaley, brown, dense, slickensides fractured.
5023-38	15	<u>Limestone</u> , dark gray, dense to finely crystalline, pin point porosity, slightly micaceous. Nodular.
5038-43	5	<u>Sandstone</u> , very limey, gray, fine to medium, tight.
<u>Drilled 5043-5100'</u>		
5100	57	<u>Limestone</u> , gray, fine to densely crystalline, in part shaley.
<u>Core 5100-5340'</u>		
5100-05	5	<u>Limestone</u> , dark gray, dense, hard, slightly micaceous.
5105-15	10	<u>Limestone</u> , gray, dense to finely crystalline, fossil cast, fragmental, not identifiable. Also Crinoid stem.
5115-35	20	<u>Limestone</u> , dark gray almost black, dense to finely crystalline, tight.
5135-60	25	<u>Limestone</u> , black, dense, tight, evidence of slickensides along fracture face, sandy.
5160-75	15	<u>Limestone</u> , dark gray, dense to finely crystalline, slightly micaceous. Porosity - none, platy. Carbonaceous specks 5165-70'.
5175-80	5	<u>Limestone</u> , light gray, dense to medium crystalline, fair indication of pin point porosity.
5180-95	15	<u>Limestone</u> , light gray, dense to finely crystalline, tight, platy, slightly micaceous, hard, brittle. Fragmental fossil remains (shell).
5195-5200	5	<u>Limestone</u> , light gray, coarsely crystalline, fair inter crystalline porosity.
5200-10	10	<u>Limestone</u> , light and dark gray, dense to finely crystalline, some pin point porosity. Pyritic, chert fragments, white (appears to be elastic).
5210-30	20	<u>Limestone</u> , gray, dense, mica flakes, hard, platy, brittle, Pelocypod shell.
5230-40	10	<u>Sandstone</u> , gray, fine with some medium, tight, hard calcareous, micaceous.
5240-55	15	<u>Limestone</u> , dark gray, dense, nodular like, tight. In part somewhat shaley. Some pin point porosity 5250-55'.
5255-65	10	<u>Limestone</u> , dark gray, dense, tight.

GLASCO #1-X

<u>Depth</u>	<u>Interval</u>	<u>Description</u>
<u>Core 5100-5340' (continued)</u>		
5265-75	10	<u>Limestone</u> , gray, finely crystalline almost granular, fair inter crystalline porosity, disseminated mica flakes.
5275-80	5	<u>Sandstone</u> , green fine to medium with pebbles of dark gray limestone, dense and tight.
5280-85	5	<u>Limestone</u> , light gray, somewhat sandy, finely crystalline, good porosity, cherty.
5285-5300	15	<u>Limestone</u> , dark gray, dense to finely crystalline, tight, thin bedded or platy. No apparent dip, chert granules.
5300-15	15	<u>Limestone</u> , dark gray, dense to finely crystalline, fair porosity. Scattered OIL STAIN, 5305-15'. Micaceous.
5315-25	10	<u>Limestone</u> , dark gray, dense, streaked with light, medium sandstone.
5325-30	5	<u>Limestone</u> , brown, dense, tight.
5330-40	10	<u>Limestone</u> , gray, dense to finely crystalline with large coarse crystals of grayish white Calcite.

Top Paradox at 5340' - R.R.S.

<u>Drilled 5340-5360'</u>		
5360	20	<u>Shale</u> , limy, black, (could almost call limestone, shaley).
<u>Core 5360-5770'</u>		
5360-75	15	<u>Limestone</u> , gray, dense with some fine crystalline, tight.
5375-5400	25	<u>Limestone</u> , dark gray, dense to finely crystalline, appears tight, platy, few mica flakes, platy appearance result of shale.
5400-05	5	<u>Limestone</u> , black to dark gray, dense, tight, mica flakes
5405-15	10	<u>Limestone</u> , black, sandy and shale streaks, dense to finely crystalline, no porosity.
5415-20	5	<u>Limestone</u> , gray black, finely crystalline, some pin point porosity, micaceous, platy.

Top 1st Evaporite (Anhydrite) at 5420'

5420-25	5	<u>Anhydrite</u> , white, crystalline, specks of dark limestone in anhydrite matrix.
5425-30	5	<u>Limestone</u> , black, finely crystalline, pin point porosity <u>Anhydrite</u> , white, crystalline, streaks of dark gray limestone, pyritic.
5430-40	10	<u>Limestone</u> , slightly dolomitic, gray, finely crystalline, very micaceous.
5440-45	5	<u>Limestone</u> , gray, finely crystalline, good pin point and inter-crystalline porosity, micaceous.
5445-5520	75	<u>Anhydrite</u> , white, crystalline, trace limestone 5450-55'.
5520-30	10	<u>Anhydrite</u> , white as above with white granules limestone.

GLASCO #1-X

<u>Depth</u>	<u>Interval</u>	<u>Description</u>
<u>Core 5360-5770' (continued)</u>		
5530-35	5	<u>Sandstone</u> , gray, fine to medium, calcareous.
5535-55	20	<u>Limestone</u> , gray with brown tinge, finely crystalline, porosity fair, pin point type. Large crystals of Calcite with slight oil stain 5545-50'. Vugs filled with Calcite crystals. No stains.
5555-70	15	<u>Shale</u> , black, slightly limey, fissile.
5570-80	10	<u>Limestone</u> , dark gray with brown cast, dense to fine crystalline. Some pin point porosity, white crystals Calcite along fracture face, fracturing irregular. Crinoid stem.
5580-85	5	<u>Limestone</u> , light gray, finely crystalline, fair inter-crystalline porosity.
5585-90	5	<u>Shale</u> , black, fissile, calcareous.
5590-95	5	<u>Limestone</u> , gray, finely crystalline, pin point porosity. Crinoid stem fragments.
5595-5605	10	<u>Sandstone</u> , gray, fine, slightly calcareous, fair porosity. Evidence of possible OIL STAIN, scattered.
5605-25	20	<u>Anhydrite</u> , grayish white, crystalline.
5625-35	10	<u>Limestone</u> , gray, dense to coarsely crystalline, very micaceous, laminations, fair pin point porosity.
5635-40	5	<u>Limestone</u> , light gray, finely crystalline, pin point porosity.
5640-55	15	<u>Shale</u> , black, calcareous, fissile, silty.
5655-65	10	<u>Limestone</u> , gray, fine to coarsely crystalline. No apparent porosity, scattered mica flakes.
5665-70	5	<u>Limestone</u> , gray, finely crystalline with shale partings black, calcareous.
5670-75	5	<u>Anhydrite</u> , white to gray, crystalline.
5675-80	5	<u>Limestone</u> , brown gray, finely crystalline, good pin point and inter-crystalline porosity. Scattered <u>OIL STAIN</u> .
5680-90	10	<u>Limestone</u> , dolomitic, gray, fine with some coarse crystalline. Porosity fair. Color mottles with dark gray and brown.
5690-95	5	<u>Anhydrite</u> , white, granular with fractures filled with black calcareous shale.
5695-5705	10	<u>Anhydrite</u> , brown gray, crystalline. Calcareous fragments imbedded in anhydrite matrix.
5705-15	10	<u>Sandstone</u> , gray, fine to medium with laminations of calcareous shale. Slight staining.
5715-20	5	<u>Limestone</u> , gray, dense, tight.
5720-30	10	<u>Shale</u> , black, fissile, calcareous.
5730-40	10	<u>Limestone</u> , dark gray, finely crystalline, some apparent pin point porosity.
5740-50	10	<u>Shale</u> , slightly calcareous, black, fissile, micaceous.

GLASCO #1-X

<u>Depth</u>	<u>Interval</u>	<u>Description</u>
<u>Core 5360-5770' (continued)</u>		
5750-55	5	<u>Shale</u> , gray black, fissile.
5755-60	5	<u>Limestone</u> , gray black, fine crystalline, very micaceous laminations.
5760-65	5	<u>Limestone</u> , gray brown, fine to coarse crystalline, fair pin point porosity. Calcite veins, white. Slightly anhydritic.
5765-70	5	<u>Anhydrite</u> , white, streaked with black shale.
<u>Top Salt at 5770'</u>		
<u>Drilled 5770-7444'</u>		
5808	34	Missing - Presumed to be salt from appearance of Lane-Wells.
5955	147	<u>Salt</u> (Lane-Wells).
5970	15	<u>Sandstone</u> , white, fine to medium, good porosity.
5995	25	<u>Anhydrite</u> , white, granular.
6010	15	<u>Salt</u> (Lane-Wells).
6045	35	<u>Sandstone and Shale</u> , dark gray to black.
6065	20	<u>Shale</u> , black to gray, fissile.
6185	120	<u>Salt</u> (Lane-Wells).
6200	15	<u>Shale</u> , black to gray, fissile.
6218	18	No Samples.
6240	22	<u>Shale</u> , gray to black, fissile, slightly calcareous, pyritic.
6270	30	<u>Sandstone</u> , white, fine to medium, trace of salt crystals and shale associated with sandstone.
6288	18	<u>Shale</u> , sandy, gray black.
6367	79	<u>Salt</u> (Lane-Wells) Samples Missing.
6387	20	<u>Shale</u> , black, fissile, pyritic.
6397	10	<u>Sandstone</u> , gray white, fine to medium with shale as above.
6427	30	<u>Sandstone</u> , grayish white, fine to medium, with shale, black, chips in the sandstone matrix, all very friable, pyritic.
6590	163	<u>Salt</u> .
6610	20	<u>Sandstone</u> , grayish white, fine to medium, friable - some shale fragments.
6875	260	<u>Salt</u> .
6880	5	<u>Sandstone</u> , grayish white, fine to medium, friable.
6925	45	<u>Salt</u> .
6943	18	<u>Shale</u> , black, fissile.
6954	8	<u>Sandstone</u> , white, fine to medium, friable, shaley in part.
6964	10	<u>Anhydrite</u> , gray, granular.
6974	10	<u>Sandstone</u> , grayish white, fine to medium.
6984	10	<u>Shale</u> , black, sandy, fissile.



GLASCO #1-X

<u>Depth</u>	<u>Interval</u>	<u>Description</u>
6994	10	Anhydrite, gray and white mottled, granular.
7004	10	Shale, black, sandy, fissile.
7094	90	Anhydrite, gray and white, mottled, granular. Stringers of shale and sandstone lens.
7104	10	Shale, gray black, fissile.
7124	20	Anhydrite, gray and white, granular.
7134	10	Shale, gray black, fissile, calcareous.
7154	20	Anhydrite, gray, granular.
7174	20	Shale, gray black, fissile, slightly calcareous.
7214	40	Limestone, gray brown, dense to finely crystalline.
7224	10	Shale, gray, fissile, sandy in part.
7254	30	No Samples.
7304	50	Limestone, grayish brown, dense, tight, becomes shaley.
7344	40	Limestone, gray, dense to some finely crystalline. Some shaley in part. No porosity. Trace white Anhydrite.
7354	10	Shale, black, calcareous, fissile.

Top Molas 7354' - R.R.S.

7414	60	Limestone, reddish gray, dense to coarsely crystalline. No porosity. Shale particles, variegated red, gray, black, pyritic.
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Described at the Well Site.

		<u>Core 7414-59'</u>	<u>Rec. 45'</u>
7414-20	6	Limestone, white, dense to finely crystalline.	
7420-25	5	Limestone, gray, red tinge, green shale along fracture face.	
7425-35	10	Limestone, buff, dense to coarsely crystalline with shale, green and red variegated.	
7435-40	5	Sandstone, red, fine to medium, hard, no porosity.	
7440-55	15	Limestone, buff, dense with intraformational red and green shale.	
7455-59	4	Limestone, brown, dense.	

		<u>Core 7459-91'</u>	<u>Rec. 32'</u>
7459-64	5	Limestone, brownish gray, dense, tight with partings, irregular of shale variegated red and green.	

Top Leadville (Miss.) 7464'

7464-91	27	Limestone, light to dark gray, fine to coarsely crystalline, pin point porosity, vertical fractures and irregular fractures with Anhydrite. Stylolitic type fracturing in bottom 10 feet.
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GLASCO #1-X

<u>Depth</u>	<u>Interval</u>	<u>Description</u>
		<u>Core 7491-97'</u> <u>Rec. 6'</u>
7491-94	3	Limestone, brownish gray, dense with vertical fracturing.
7494-97	3	Sandstone, buff, fine to medium, non-calcareous, good porosity, dead oil staining.
		<u>Core 7497-7507'</u> <u>Rec. 10'</u>
7497-98	1	Sandstone, buff, as above.
7498-7507	9	Limestone, light gray, dense to finely crystalline, fractured irregularly, fossiliferous, porosity fair in part. Vugular, horn coral.
		<u>Core 7507-61'</u> <u>Rec. 54'</u>
7507-37	30	Limestone, light gray, dense to finely crystalline, porosity developed along irregular fractures inter-crystalline type, horn coral, stylolites.
7537-38	1	Dolomite, dirty gray, fine crystalline with Anhydrite.
7538-44	6	Limestone as 7507-37' with vertical fractures.
7544-46	2	Dolomite, gray, very porous, dead oil saturation.
7546-48	2	Dolomite, light gray, dense to finely crystalline, wet. Porosity fair.
7548-61	13	Limestone, dolomitic, light to dark gray, fine to coarsely crystalline, disseminated white Anhydrite. Irregular fracturing, Pelecypods, minute veins of Calcite.
		<u>Core 7561-7608'</u> <u>Rec. 47'</u>
7561-62	1	Dolomite, dark gray, dense, irregular fracturing with Anhydrite.
7562-72	10	Limestone, light gray, finely crystalline, tight, vertical fracturing, fossiliferous, Pelecypods.
7572-73	1	Dolomite, light gray, finely crystalline, fair porosity, irregular fracturing, black stain along fractures. Appears wet.
7573-83	10	Limestone, light gray, coarsely crystalline, fair inter-crystalline porosity, vertical fractures, irregular dark staining throughout (not oil).
7583-83 $\frac{1}{2}$	1/2	Dolomite, with Anhydrite, dark gray, irregular fractures
7583 $\frac{1}{2}$ -90	6-1/2	Limestone, as section 7573-83', above.
7590-7608	18	Dolomite, light to dark gray, dense to finely crystalline, porosity good, vugular. Irregular fracturing; associated with Anhydrite, white, granular, nodular. Best zone porosity 7594-7600'.
		<u>Core 7608-7613'</u>
7608-10	2	Dolomite, limey, buff, coarsely crystalline, tight.
7610-13	3	Limestone, dolomitic, dark gray, fine to coarsely crystalline, good pin point porosity.

GLASCO #1-X

<u>Depth</u>	<u>Interval</u>	<u>Description</u>
		<u>Core 7615-21'</u>
7613-21	8'	<u>Dolomite</u> , limey, buff, coarsely x-talline.

TOTAL DEPTH 7621' in Leadville formation (Mississippian)

Robert R. Smart

# DRILLERS LOG

## HATHAWAY-GLASCO FEDERAL #1-E

FROM	TO	TOTAL FEET	FORMATION
0	35	35	Surface
35	65	30	Sand, some shale
65	100	35	Blue and red shale - broken
100	120	20	Blue and red shale
120	150	30	Grey shaley sand
150	210	60	Red shale
210	248	38	Red Shale
248	250	2	Very hard shale
250	253	3	Hard shale and sand
253	260	7	Sand, medium hard, red
260	275	15	Hard red sand
275	285	10	Red Sand
285	290	5	Shale and Red Sand
290	315	25	Broken sand and shale, red
315	325	20	Shale, red and grey
325	345	10	Fine red sand
345	367	22	Sand & some shale, buff
367	380	13	Buff sand - flowed at 370
380	395	15	Buff sand - more water at 382 - Hole flows some sand
395	425	30	Buff sand - flowing, some sand
425	490	65	Buff sand, harder at bottom, finer sand, flowing sand
490	505	15	Fine buff sand
505	523	18	Broken reddish brown sand & shale
523	542	19	Sand
542	662	120	Sand-water flow rate 180 bbls. per hr. at 662
662	700	38	Sand - Increased water flow
700	730	30	Red shale
730	840	110	Sand
840	992	152	Sand and red shale
992	1175	183	Sand stone
1175	1352	177	Sand- Hd. Streaks
1352	1452	100	Red sand stone
1452	1565	113	Sand
1565	1642	77	Sand and red shale
1642	1732	90	Sand and red shale
1732	1871	139	Red sand & Streaks red shale
1871	1988	117	Streaks sand & red shale
1988	2052	64	Streaks, sand & red shale
2052	2162	110	Red beds
2162	2310	158	Red sand, streaks shale & lime
2310	2410	100	Red & Grey sand - Streaks of coal
2410	2527	117	Grey Sand, Hard streaks & streaks coal, salt water at 2500'
2527	2620	93	Grey sand and shale

FROM	TO	TOTAL FEET	FORMATION
2620	2640	20	Grey sand & shale - streaks lime
2640	2750	110	Red shale, streaks of sand
2750	2804	54	Shale - Hard streaks
2804	2880	76	Hard shale
2880	2935	55	Red shale, streaks of sand
2935	2977	42	Sand & shale - red & grey
2977	3095	118	Red & Grey Shale - Hard Streaks
3095	3178	83	Red shale, streaks of sand
3178	3190	12	Shale
3190	3304	114	Shale and streaks hard sand
3304	3394	90	Shale, streaks of sand
3394	3435	41	shale
3435	3460	25	Red shale and hard green shale
3460	3473	73	Shale & streaks sand
3533	3617	84	Shale
3617	3660	43	Hard shale
3660	3690	30	Shale
3690	3775	85	Shale, hard streaks
3775	3827	52	Shale & hard streaks
3827	3834	7	Hard shale
3834	3946	112	Shale - red and green
3946	4039	93	Red & green shale & hard streaks
4039	4079	40	Hard Shale
4079	4137	58	Shale, hard streaks
4137	4247	110	Shale
4247	4322	75	Shale
4322	4336	14	Shale, streaks Lime
4336	4436	100	Shale & Lime
4436	4485	49	Hard shale, & Lime
4485	4508	23	Hard shale
4508	4532	24	Hard Lime
4532	4580	48	Hard shale, streaks lime
4580	4606	26	Lime streaks and shale
4606	4626	20	Shale & Streaks of Lime
4626	4674	48	Lime
4674	4716	42	Lime
4716	4758	42	Core
4758	4770	12	Lime & shale
4770	4840	70	Shale & Streaks lime
4840	4884	44	Lime & hard shale
4884	4963	79	Lime & streaks shale
4963	5015	52	Cored
5015	5017	2	Shale

FROM	TO	TOTAL FEET	FORMATION
5017	5071	54	Black Shale
5071	5108	37	Shale
5108	5332	224	Cored
5332	5355	23	Hard Shale - Streaks Lime
5355	5842	487	Cored
5842	5953	111	Salt
5953	6008	55	Salt & Shale
6008	6027	19	Salt, Streaks Shale
6027	6087	60	Salt & Shale
6087	6195	108	Shale & Salt
6195	6364	169	Shale & Salt
6364	6397	33	Shale
6397	6425	28	Hard Shale
6425	6434	9	Hard Lime
6434	6452	23	Shale and Salt
6452	6575	118	Salt
6575	6627	52	Shale and volcanic ash
6627	6747	120	Salt and shale
6747	6877	130	Shale and salt
6877	6914	37	Salt
6914	6959	45	Hard Shale and Lime
6959	6969	10	Hard Shale
6969	7002	33	Shale and Lime
7002	7024	22	Shale and anhydrite
7024	7091	67	Anhydrite
7091	7116	25	Shale and anhydrite
7116	7152	36	Hard Shale
7152	7175	23	Hard shale and Lime
7175	7195	20	Hard shale and gray Lime
7195	7208	13	Hard shale and Lime
7208	7256	48	Hard Lime
7256	7282	26	Lime
7282	7307	25	Lime and Shale
7307	7324	17	Lime
7324	7336	12	Hard Lime
7336	7349	13	Hard Shale
7349	7369	20	Hard Lime
7369	7394	25	Red Shale
7394	7415	21	Red shale and streaks sandstone
7415	7613	193	Cored
7613	7621	8	Lane-Well Measurement

\* See Attached core record for intervals cored.

APPLICATION FOR INJECTION WELL

Operator: Meridian Oil Inc. Telephone: 406-256-4000

Address: P. O. Box 1855

City: Billings State: MT Zip: 59103

1050 FSL 1100 FWL

Well no.: 14-4 Navajo-Federal Field or Unit name: Kiva

Sec.: 4 Twp.: 39S Rng.: 25E County: San Juan Lease no. \_\_\_\_\_

	<u>YES</u>	<u>NO</u>
Is this application for expansion of an existing project?.....	_____	<u>X</u>
Will the proposed well be used for: Enhanced recovery?.....	<u>X</u>	_____
Disposal?.....	_____	<u>X</u>
Storage?.....	_____	<u>X</u>
Is this application for a new well to be drilled?.....	<u>X</u>	_____
Has a casing test been performed for an existing well?.....	_____	<u>X</u>
(If yes, date of test: _____)		

Injection interval: from 5450 (est) to 5650 (est)

Maximum injection: rate 5000 (est) pressure 3740 psig

Injection zone contains X oil, X gas or \_\_\_\_\_ fresh water within 1/2 mile.

Additional information as required by Rule 502 should accompany this form.

I hereby certify that the foregoing is true and correct to the best of my knowledge:

Signed: Daniel Soderstrom Title: Petroleum Engineer Date: 3/10/87

(This space for DOGM approval)

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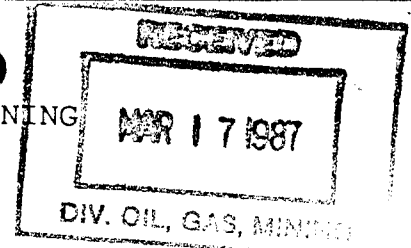
DIVISION OF  
OIL, GAS & MINING

Approved by: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

BEFORE THE BOARD OF OIL, GAS AND MINING

DEPARTMENT OF NATURAL RESOURCES

STATE OF UTAH



IN THE MATTER OF THE PETITION )	✓	AMENDED PETITION
OF MERIDIAN OIL, INC. FOR )		
APPROVAL OF A WATER FLOOD )		
SECONDARY RECOVERY PROJECT FOR )		
THE KIVA FIELD, SAN JUAN )	Docket No. 87-011	
COUNTY, UTAH )	Cause No. 215-1	

COMES NOW, Meridian Oil Inc., operator of the Kiva Field in San Juan County, State of Utah, and files this Amended Petition to the Utah Board of Oil, Gas and Mining for authority to inject water into the producing upper Ismay zone of the Paradox Formation for the purpose of enhancing recovery of oil from the Kiva Field. The purpose of this Amended Petition is to expand by 160 acres the lands included within the project, to conform with the proposed secondary recovery federal unit. As now amended the petition applies to the following lands in the San Juan County, Utah:

Township 39 South, Range 25 East, SLM

Section 4: SE $\frac{1}{4}$ SE $\frac{1}{4}$ , W $\frac{1}{2}$ SE $\frac{1}{4}$ , SW $\frac{1}{4}$ , S $\frac{1}{2}$ NW $\frac{1}{4}$ , NW $\frac{1}{4}$ NW $\frac{1}{4}$   
 Section 5: E $\frac{1}{2}$   
 Section 8: NE $\frac{1}{4}$ NE $\frac{1}{4}$   
 Section 9: N $\frac{1}{2}$

As set forth in the original Petition, the proposed injection program will utilize water produced from the upper Ismay zone of the Paradox Formation and makeup water, as necessary, produced from the Cutler Sands in the Kiva Field, and will be injected into three (3) new wells to be drilled in the Kiva Field for water injection purposes. All of the affected



lands are held under federal oil and gas leases operated by the Petitioner. Simultaneously with this Petition, the Petitioner is in the process of filing UIC applications with the Division of Oil, Gas and Mining for the three proposed injection wells, and is applying to the Utah State Office of the Bureau of Land Management to form a federal secondary recovery unit for the Kiva Field operations.

Attached to this Amended Petition filed with the Board are the following items:

1. A revised plat showing the area involved and identifying all wells, including all injection wells, in the project area and within a one-half ( $\frac{1}{2}$ ) mile radius of the project area.
2. A revised list of all operators or owners and surface owners within a one-half mile radius of the proposed project (including two new addresses).
3. An amended affidavit certifying that said operators or owners and surface owners within a one-half mile radius have been provided a copy of the Petition.

All prior information submitted with the original Petition in compliance with Rule 501(b), remains unchanged:

(a) The name and address of the operator of the project is:

Meridian Oil, Inc.  
P.O. Box 1855  
(175 North 27th Street)  
Billings, MT 59103  
Attn: Daniel A. Sodersten,  
Petroleum Engineer

- (b) The reservoir from which the Kiva Field wells are producing is in the Desert Creek and upper Ismay zone of the Paradox Formation, which lies at the depth interval ranging from 5471 ft. down to 5618 feet in the Kiva Field.
- (c) Non-potable water will be used as the fluid for injection, and its source is water produced from the upper Ismay zone or in connection with oil operations from the upper Desert Creek and Ismay zones, with makeup water, as necessary, produced from the non-potable water bearing Cutler Sands which lie at a depth interval of 1600 ft. to 3100 ft. in the Kiva Field. The estimated maximum rate to be injected daily is 6400 BWPD at a maximum surface pressure of 3740 psi (1.1 psi/ft).

WHEREFORE, Petitioner requests that the Board receive testimony and evidence at its regularly scheduled hearing on April 23, 1987, for the purpose of authorizing the water injection program proposed in this Amended Petition by Petitioner for the Kiva Field. Petitioner further requests that notice of this Amended Petition, and of the hearing, be given as provided by the Procedural Rules of the Board, and that the Board provide such other relief as may be just and proper under the circumstances.

DATED this 13th day of March, 1987.

MERIDIAN OIL, INC.

By: 

Robert G. Pruitt, Jr.  
Attorney for Meridian Oil, Inc.  
Pruitt, Gushee & Fletcher  
1850 Beneficial Life Tower  
Salt Lake City, UT 84111  
Telephone: (801) 531-8446

Address of Petitioner:

Meridian Oil, Inc.  
Attn: Daniel A. Sodersten, Petroleum Engineer  
P.O. Box 1855  
Billings, MT 59103  
Telephone: (406) 256-4073

## WELL DIAGRAM - MECHANICAL DETAIL

Well No. 9-1 Navajo Fed. Field Kiva Formation U. Ismay  
 County San Juan State UT CA#/Federal Lease #U-52333  
 Legal Desc. NWNE, 770' FNL, 2010' FEL Sec. 9 Twp 39S Rge 25E  
 KB Elev 4851' GL Elev 4838' TD 5823' PBTD 5779'  
 Spud Date 7/13/84 Rig Released 8/6/84 Completion Date 8/22/84

### IP:

358 BOPD, 372 MCFD, 0 BWPD, 32/64" chk, 75# FTP

Casing Size	Hole Size	From	To	Wt., Gr., Etc.
9-5/8"	12-1/4"	0.00	1523.85	40#, N-80, 8rd
5-1/2"	8-3/4"	0.00	2590.67	15.5#, K-55, 8rd
		2590.67	2633.03	XO
		2633.03	3793.84	17#, J-55, 8rd
		3793.84	3796.84	Stage collar
		3796.84	5334.27	17#, J-55, 8rd
		5334.27	5778.85	17#, N-80, 8rd
		5778.85	5780.65	Diff fill float collar
		5780.65	5822.57	17#, N-80, 8rd
		5822.57	5723.37	Guide shoe

### Surface Casing Cement:

650 sxs cement; cemented thru 1" pipe w/152 sxs cement

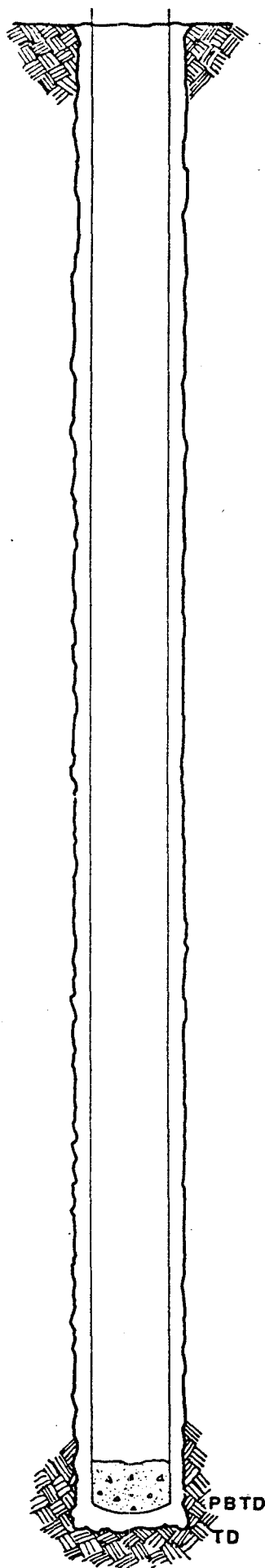
### Production Casing Cement:

1st Stage: 485 sxs cement  
 2nd Stage: 654 sxs cement

Perforations	Formation	Status
5881'-86'	Upper Ismay	Open
5519'-23'; 5530'-32',	Upper Ismay	Open
5542'-45'; 5548'-52',		
5556'-58'; 5561'-67'		

### Remarks

Squeezed DV tool w/25 sxs cement  
 5881'-86': Acidize w/130 gals 15% MSR-100  
 5519'-5881': Acidize w/2600 gals 15% MSR-100  
 5519'-5881' (10/5/86): Acidize w/490 bbls 16% HCl gelled acid



PAGE TWO (WELL DIAGRAM - MECHANICAL DETAIL)

Tubing Data as of (Date Run) 8/26/84

<u>Jts.</u>	<u>Description</u>	<u>Length</u>	<u>Depth</u>
172	2-7/8", 6.5#, N-80, 8rd tubing	5433.38	
	Baker "F" seating nipple (2.25" ID)	.95	5446.58
	Baker Model AL-2 Lok-set packer (5½")	4.97	5452.50

Model/Type Release

Tension/Compression

Baker Model AL-2 packer set w/17,000# tension

Description Other Downhole Equipment

Rod Data as of (Date Run)

<u>Size</u>	<u>No.</u>	<u>Feet</u>	<u>Scrapers</u>	<u>Plain</u>	<u>New/Used</u>	<u>Grade</u>
-------------	------------	-------------	-----------------	--------------	-----------------	--------------

Polish Rod

Pump Size/Type

(As Of)

Remarks

9-1 Navajo Federal  
San Juan County, UT  
Kiva Field  
11/20/86

## WELL DIAGRAM - MECHANICAL DETAIL

Well No. 4-1 Navajo Fed. Field Kiva Formation Desert Creek  
 County San Juan State UT CA#/Federal Lease #U-52333 Ismay  
 Legal Desc. SESW, 370' FSL, 1940' FWL Sec. 4 Twp 39S Rge 25E  
 KB Elev GL Elev 4862' TD 5827' PBSD  
 Spud Date 12/19/84 Rig Released Completion Date 5/30/85

### IP:

Desert Creek: 936.94 BOPD, 1127 MCFD, 0 BWPD, 32/64" chk, 243# FTP  
 Ismay: 1002.1 BOPD, 763 MCFD, 0 BWPD, 32/64" chk, 300 FTP

Casing Size	Hole Size	From	To	Wt., Gr., Etc.
13-3/8"	17-1/2"	0.00	210.78	48#, H-40, 8rd
8-5/8"	11"	0.00	1521.23	24#, K-55, 8rd
		1521.23	1524.93	Stage collar
		1524.93	2009.03	24#, K-55, 8rd
		2009.03	3435.14	32#, K-55, 8rd
		3435.14	3436.84	Float collar
		3436.84	3516.39	32#, K-55, 8rd
		3516.39	3517.59	Guide shoe

See pack for production string

### Surface Casing Cement:


13-3/8": 235 sxs cement

8-5/8": 1st Stage: 682 sxs cement

2nd Stage: 512 sxs cement; 50 sxs top job

### Production Casing Cement:

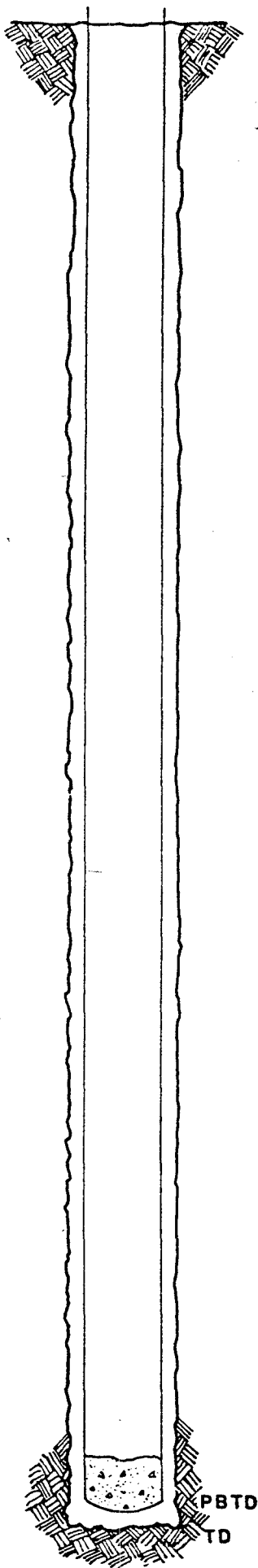
480 sxs cement

5 1/2" 5825 712 cu ft from well site 

Perforations	Formation	Status
5771'-84'	Desert Creek	Open
5543'-48'; 5551'-54';	Ismay	Open
5559', 5565'-78'; 5593'-96'		

### Remarks

5771'-84': Acidize w/1300 gals 15% MSR-100, 52 balls; BD @ 3050#.  
 Acidize w/13,000 gals 15% MSR-100, 15,000 gals WF40, 40# gel  
 5543'-96': Breakdown w/1500 gals MSR-100  
 Acid-frac w/18,400 gals 28% MSR-100, 26,000 gals 40# gelled water



PAGE TWO (WELL DIAGRAM - MECHANICAL DETAIL)

Tubing Data as of (Date Run) 9/17/85

Jts.	Description	Length	Depth (top)
Long String (Desert Creek):			
1	2-1/16" IJ, J-55, 3.25#, 10rd tubing	33.01	10.00
1	2-1/16" IJ, J-55 x 2' tubing sub	1.92	43.01
1	2-1/16" IJ, J-55 x 3' tubing sub	2.92	44.93
1	2-1/16" IJ, J-55 x 10' tubing sub	9.87	47.85
168	2-1/16" IJ, J-55, 3.25#, 10rd tubing	5462.28	57.72
4	Blast joints, 2.375" OD x 1.70" ID	79.47	5520.00
4	2-1/16" IJ, J-55, 3.25#, tubing	128.40	5599.47
1	XO, 2-3/8" EUE pin x 2-1/16" IJ box, 3" OD x 1.75" ID	.33	5727.87
1	Otis J-latch seal assembly:		
	Locator, 3.13" OD x 1.94" ID	1.13	5728.20
	Seal unit, 2.7" OD x 1.94" ID	.99	5729.33
	Lock bar unit, 2.7" OD x 1.94" ID	2.72	5730.32
	Muleshoe-WL guide, 2.7" OD x 1.94" ID	1.33	5733.04
	End of Muleshoe @ (tubing measurement)		5734.37
1	Otis permatrieve pkr, 4.62" OD x 1.96" ID (Bore); set @ 5732' WL depth (Packing ele.)	5.95	5729.00
1	XO, 2-7/8" EUE box x 2-3/8" EUE pin 3.668" OD x 2.0" ID	.42	5734.95
1	XO, 2-3/8" DUD box x 2-1/16" IJ pin, 2.875" OD x 1.75" ID	.39	5735.37
1	2-1/16" IJ, J-55 x 6' tubing sub	5.91	5735.76
1	Otis "X" nipple, 2.125" OD x 1.50" ID	1.05	5741.67
1	2-1/16" IJ, J-55 x 4' perforated sub	3.89	5742.72
1	2-1/16" IJ, J-55 x 8' tubing sub	7.92	5746.61
1	2-1/16" IJ, J-55 x 4' tubing sub	3.88	5754.53
1	Otis "N" nipple, 2.225" OD x 1.50" ID, with 1.440" No-Go	1.04	5758.41
	Muleshoe-WL re-entry guide	1.63	5759.45
	End of tailpipe below pkr @ (WL meas.)		5761.08
	Landed w/8,000# in tension		
Short String (Ismay):			
1	XO, 2-1/16" IJ pin x 1.9" IJ pin, 1.6" ID	.35	10.00
170	1.9" OD IJ, J-55, 2.76# tubing	5457.19	10.35
1	Otis "X" nipple, 1.50" ID	1.15	5467.54
1	1.9" IJ, J-55, 2.76# tubing	32.35	5468.69
1	Otis "N" Nipple, 1.50" ID w/1.448" No-Go	.92	5501.04
1	Muleshoe-WL re-entry guide	1.68	5501.96
	End of 1.9" short string @		5503.64

4-1 Navajo Federal  
San Juan County, UT  
Kiva Field  
11/20/86

## WELL DIAGRAM - MECHANICAL DETAIL

Well No. 4-2 Navajo Fed. Field Kiva Formation U. Usmay (GIW)  
 County San Juan State UT CA#/Federal Lease # U-52333  
 Legal Desc. SWSE, 300' FSL, 2225' FEL Sec. 4 Twp 39S Rge 25E  
 KB Elev GL Elev 4864' TD 5825' PBTD 5803'  
 Spud Date 7/24/85 Rig Released 8/11/85 Completion Date 9/6/85

IP:

960.73 BOPD, 39 BWPD, 1890 MCFD, 2" ckh, 300# FTP

Casing Size	Hole Size	From	To	Wt., Gr., Etc.
8-5/8"	12-1/4"	0'	2999'	24#, 32#, K-55, 8rd Stage collar @ 1496.05'
5-1/2"	7-7/8"	0'	5825'	15.5#, K-55, 8rd

Surface Casing Cement:1st Stage: 482 sxs Class "B" 65/35 Pozmix, 6% gel, 1/4#/sx Flocele, 2% CaCl<sub>2</sub>, 1% D-592nd Stage: 362 sxs Class "G" 65/35 Pozmix, 6% gel, 1/4#/sx Flocele, 2% CaCl<sub>2</sub>, 1% D-59; 50 sxs Class "G", 2% CaCl<sub>2</sub> thru 1"Production Casing Cement:

710 sxs Class "B" 65/35 Pozmix, 6% gel, tail w/150 sxs Class "B", 1% D-60 FLAC

Perforations	Formation	Status
5753'-58'; 5761'-63'; 5766'	Upper Desert Creek	Retainer @ 5701'
5524'-36'; 5539'-43';	Upper Ismay	Open
5546'-51'; 5557'-68';		
5571'-82'; 5585'-92';		
5595'-97'		

Remarks5753'-66': Acidize w/13,000 gals 28% SAN-2, 19,512 gals 40# gel  
Acidize w/20,000 gals 28% SAN-25524'-97': Acidize w/5000 gals 15% SAN-1, 28,000 gals 28% SAN-1,  
30,000 gals 40# gel

Converted to GIW 3/86

PBTD  
5803'  
TD  
5825'



PAGE TWO (WELL DIAGRAM - MECHANICAL DETAIL)

Tubing/Production Equipment as of (Date Run) 9/1/85

<u>Jts.</u>	<u>Description</u>	<u>Length</u>	<u>Depth</u>
166	2-7/8", 6.5#, EUE, 8rd tubing	5304.76	
	Common pump SN (2.280" ID)		5316.76
	Lok-Set packer (5-1/2")		5322.01'

Model/Type Release

Tension/Compression

Rod Data as of (Date Run)

<u>Size</u>	<u>No.</u>	<u>Feet</u>	<u>Scrapers</u>	<u>Plain</u>	<u>New/Used</u>	<u>Grade</u>
-------------	------------	-------------	-----------------	--------------	-----------------	--------------

Polish Rod

Pump Size/Type

(As Of)

Remarks

4-2 Navajo Federal  
San Juan County, UT  
Kiva Field  
2/4/87

## WELL DIAGRAM - MECHANICAL DETAIL

Well No. 4-4 Navajo Fed. Field Kiva Formation Ismay  
 County San Juan State UT CA#/Federal Lease # U-52333  
 Legal Desc. NWSW, 1980' FNL, 660' FWL Sec. 4 Twp 39W Rge 25E  
 KB Elev 4892' GL Elev 4879' TD 5843' PBTD 5821'  
 Spud Date 8/12/85 Rig Released 8/27/85 Completion Date 3/16/86

IP:

1142 BOPD, 799 MCFD, 0 BWPD, 32/64" chk, 325# FTP

Casing Size	Hole Size	From	To	Wt., Gr., Etc.
8-5/8"	12-1/4"	0'	3520'	24#, 32#, K-55 Stage tool @ 1522.71'
5-1/2"	7-7/8"	0'	5843'	15.5#, K-55

## Surface Casing Cement:

1st Stage: 482 sxs Class "B" 65/35 Pozmix, 6% gel, 1/4#/sx Flocele, 2% CaCl<sub>2</sub>  
 200 sxs Class "G", 2% CaCl<sub>2</sub>, 1% D-60

2nd Stage: 362 sxs Class "B" 65/35 Pozmix, 6% gel, 2% CaCl<sub>2</sub>, 1/4#/sx Flocele  
 150 sxs Class "G", 2% CaCl<sub>2</sub>, 1% D-60; 75 sxs Class "G", 2% CaCl<sub>2</sub> thru 1"

## Production Casing Cement:

280 sxs Class "G" 65/35 Pozmix, 6% gel,; tail w/150 sxs Class "G", 1%  
 D-60 FLAC

Perforations	Formation	Status
5598'-5602'; 5604'-11'	Ismay	Open
5578'-94'	Ismay	Open
5537'-68'	Ismay	Open
5513'-20'	Ismay	Open

## Remarks

5578'-5611': Acidize w/3000 gals 15% HCl, 150 balls

5537'-68': Acidize w/3500 gals 15% HCl, 300 gals gelled 2% KCl w/1 ppg  
 Benzoic acid flakes; AIP 200 psi, AIR 5 BPM

5513'-20': BD w/1000 gals 15% HCl

PBTD  
 TD

PAGE TWO (WELL DIAGRAM - MECHANICAL DETAIL)

Tubing/Production Equipment as of (Date Run) 2/14/86

<u>Jts.</u>	<u>Description</u>	<u>Length</u>	<u>Depth</u>
	2-7/8" tubing		
	2-7/8" x 6' tubing sub		
	Baker Model R-3 DG full bore pkr, 2.375" ID		5420'
1	2-7/8" tubing		
	Otix "X" nipple (2.313" ID)		
±	2-7/8" tubing		
	Otis XN nipple (2.313" ID) w/2.205" NO-GO		
	W.L. re-entry guide		

Model/Type Release

Tension/Compression

Rod Data as of (Date Run)

<u>Size</u>	<u>No.</u>	<u>Feet</u>	<u>Scrapers</u>	<u>Plain</u>	<u>New/Used</u>	<u>Grade</u>
-------------	------------	-------------	-----------------	--------------	-----------------	--------------

Polish Rod

Pump Size/Type

(As Of)

Remarks

4-4 Navajo Federal  
San Juan County, UT  
Kiva Field  
2/4/87

## WELL DIAGRAM - MECHANICAL DETAIL

Well No. 23-4 Navajo Fed. Field Kiva Formation U. Ismay  
 County San Juan State UT CA#/Federal Lease #U-52333  
 Legal Desc. NESW, 1500' FSL, 2500' FWL Sec. 4 Twp 39S Rge 25E  
 KB Elev 4889' GL Elev 4877' TD 5860' PBD 5816'  
 Spud Date 5/16/86 Rig Released 5/28/86 Completion Date 7/18/86

IP:

43 BOPD, 60 MCFD, 10 BWPD

Casing Size	Hole Size	From	To	Wt., Gr., Etc.
9-5/8"	12-1/4"	0.00	1593.49	36#, K-55, ST&C, R3
		1593.47	1594.65	Orifice fill collar
		1594.65	1638.58	36#, K-55, ST&C, R3
		1638.58	1642.25	36#, K-55, ST&C, R3, Perf
		1642.25	1644.39	36#, K-55, ST&C, R3 Nipple
		1644.39	1645.53	Guide shoe
5-1/2"	8-3/4"	0.00	3456.65	17#, J-55, ST&C, R3
		3456.65	3458.34	Stage collar
		3458.34	5310.54	17#, J-55, ST&C, R3
		5310.54	5322.41	17#, J-55, ST&C, R3
		5322.41	5815.99	17#, J-55, ST&C, R3
		5815.99	5817.74	Diff fill float collar
		5817.74	5858.92	17#, J-55, ST&C, R3
		5858.92	5860.00	Guide shoe

## Surface Casing Cement:

420 sxs DS LW-3, 2% CaCl<sub>2</sub>, 1/4#/sx D-29 cellophane flakes; tail w/200 sxs Class "B" cement, 2% CaCl<sub>2</sub>, 1/4#/sx D-29 cellophane flakes.

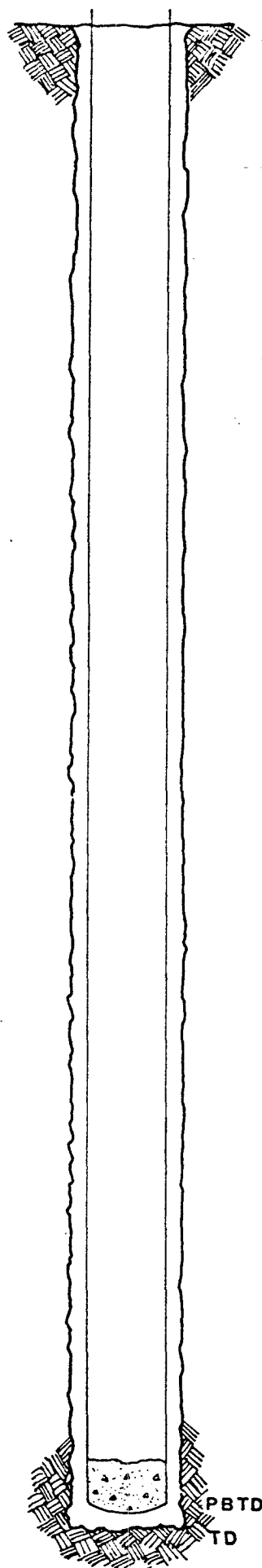
## Production Casing Cement:

1st Stage: 450 sxs DS LW-III, 1/4#/sx D-29 cellophane flakes; tail w/305 sxs Class "B" cement, 1% D-60 flac, 2% CaCl<sub>2</sub>, 1/4#/sx D-29 Cellophane flakes.  
 2nd Stage: 1018 sxs LW-III, 1/4#/sx Cellophane flakes; tail w/100 sxs D-917, 1/4#/sx Cellophane flakes.

Perforations	Formation	Status
5776'-91'	Desert Creek	CIBP @ 5760'
5609'-18'	Upper Ismay	Open

## Remarks

5776'-91': Acidize w/1500 gals 15% HCl, 90 balls  
 5609'-18': Acidize w/1000 gals 15% HCl, 60 balls  
 Acidize w/71.5 bbls 28% HCl, 60 balls  
 Acidize w/11,000 gals DGA215



PAGE TWO (WELL DIAGRAM - MECHANICAL DETAIL)

Tubing Data as of (Date Run) 7/11/86

<u>Jts.</u>	<u>Description</u>	<u>Length</u>	<u>Depth (top)</u>
	Tubing to pull tension on anchor	2.00	14.00
168	2-7/8", 6.5#, J-55 tubing	5523.24	5537.24
	Tubing anchor catcher	2.78	5540.02
3	2-7/8", 6.5#, J-55 tubing	99.10	5639.12
	2½" cup type seating nipple	1.00	5640.12
	2-7/8" x 3' perforated sub	3.00	5643.12
1	2-7/8", 6.5#, J-55 tubing	32.02	5675.12
	Bull plug	.90	5675.14
	Bottom of string		5676.04

Model/Type Release

Tension/Compression

Description Other Downhole Equipment

Rod Data as of (Date Run) 7/11/86

<u>Size</u>	<u>No.</u>	<u>Feet</u>	<u>Scrapers</u>	<u>Plain</u>	<u>New/Used</u>	<u>Grade</u>
7/8"	1	8				Pony rod
7/8"	1	6				Pony rod
7/8"	1	4				Pony rod
7/8"	1	2				Pony rod
7/8"	65	1625				D
3/4"	158	3950				D

Polish Rod 1¼" x 12'

Pump Size/Type 2½" x 1¼" x 16' RHBC  
1¼" x 22' gas anchor

(As Of) 7/11/86

Remarks

23-4 Navajo Federal  
San Juan County, UT  
Kiva Field  
11/20/86

## WELL DIAGRAM - MECHANICAL DETAIL

Well No. Navajo Fed 42-5 Field Kiva

Formation

County San Juan State UT CA#/Federal Lease #U-58728

Legal Desc. SENE, 2130' FNL, 320' FEL Sec. 5 Twp 39S Rge 25E

KB Elev 4811' GL Elev 479' TD 5782' PBTD 5710'

Spud Date 9/16/86 Rig Released 10/1/86 Completion Date 10/18/86

IP:

220 BOPD, 0 BWPD, 308 MCFD, 36/64" chk, 100# FTP; GOR 1400:1

To C  
2880

Casing Size	Hole Size	From	To	Wt., Gr., Etc.
13-3/8"	17-1/2"	0.00	145.00	61#, K-55, ST&C
8-5/8"	11"	0.00	1535.92	24#, J-55, ST&C, R3
		1535.92	1538.58	Stage collar
		1538.58	2018.73	24#, J-55, ST&C, R3
		2018.73	3257.02	32#, J-55, ST&C, R3
		3257.02	3259.03	Float collar
		3259.03	3298.97	32#, J-55, ST&C, R3
		3298.97	3300.00	Guide shoe
5-1/2"	7-7/8"	0.00	5736.51	17#, J-55, ST&C
		5736.51	5738.76	Diff. fill float collar
		5738.76	5779.92	17#, J-55, ST&C
		5779.92	5781.00	Guide shoe

## Surface Casing Cement:

13-3/8": 170 sxs D-917 Highearly, 3% S-1 (15.6 ppg, 1.18 cf/sx)

## Production Casing Cement:

8-5/8": 1st Stage: 250 sxs Lite-Wt III, 2% CaCl<sub>2</sub>, 1/4#/sx Cellophane flakes; tail w/200 sxs Class "B" Highearly, 2% CaCl<sub>2</sub>, 1/4#/sx Cellophane flakes.

2nd Stage: 350 sxs Lite-Wt III, 2% CaCl<sub>2</sub>, 1/4#/sx Cellphane flakes; tail w/100 sxs Class "B" Highearly, 2% CaCl<sub>2</sub>, 1/4#/sx Cellophane flakes.

5-1/2": 50 sxs Lite-Wt III wiper plug. 523 sxs Lite-Wt III, 1/4#/sx D-29 Cellophane flakes; tail w/220 sxs Class "B", 1% D-60 Flac, 1/4#/sx D-29 Cellophane flakes.

Perforations	Formation	Status
--------------	-----------	--------

5471-77	5471'-77', 5486'-90',	Open
5486-90	5500'-02', 5506'-10',	
5500-02	5512'-15', 5521'-26',	
5506-10	5536'-44'	

5512-15
5521-26
5536-44

## Remarks

5471'-5544': Acidize w/1600 gals 15% HCl  
 Acidize w/7500 gals 15% HCl, 180 balls; AIR 3 BPM,  
 AIP 2500#  
 Frac w/32,000 gals Versagel, 36,000# 12/20 sand (12/31/86)  
 1000 gals Isopropyl alcohol, 110 gals Welchem Super-A  
 Sol, 2500 gals Methanol, displ w/27 bbls crude (2/15/87)

PBTD 5710

TD 5782

PAGE TWO (WELL DIAGRAM - MECHANICAL DETAIL)

Tubing/Production Equipment as of (Date Run) 1/3/87

<u>Jts.</u>	<u>Description</u>	<u>Length</u>	<u>Depth (top)</u>
177	2-7/8", 6.5#, J-55, EUE tubing	5392.12	10.00
	Otis overshot seal divider (on-off)		
	(2.313" ID)	1.23	5402.12
1	2-7/8", 8rd x 2-3/8" 8rd XO swage (2" ID)	.35	5403.35
	Otis perma-latch packer (1.9" ID)	5.89	5403.70
1	2-3/8", 4.7#, J-55, EUE, 8rd tubing sub	6.00	5409.59
	Otis "X" nipple (1.875" ID)	1.19	5415.59
1	2-3/8", 4.7#, J-55, EUE, 8rd perf sub	3.09	5416.78
1	2-3/8", 4.7#, J-55, EUE, 8rd tubing sub	5.97	5419.87
1	2-3/8", 4.7#, J-55, EUE, 8rd tubing sub	8.10	5425.84
	Otis "XN" nipple (1.875" ID w/1.79" NO-GO)	1.72	5433.94
	w/WL re-entry guide		
	Bottom of string		5435.66

Model/Type Release

Tension/Compression

Otis perma-latch @ 5403.70' w/5000# up, 40,000# over shear pins

Rod Data as of (Date Run)

<u>Size</u>	<u>No.</u>	<u>Feet</u>	<u>Scrapers</u>	<u>Plain</u>	<u>New/Used</u>	<u>Grade</u>
-------------	------------	-------------	-----------------	--------------	-----------------	--------------

Polish Rod

Pump Size/Type

(As Of)

Remarks

42-5 Navajo Federal  
San Juan County, UT  
Kiva Field  
3/9/87

WELL DIAGRAM - MECHANICAL DETAIL

Well No. 9-2 Navajo Fed. Field Kiva Formation Dryhole  
 County San Juan State UT CA#/Federal Lease #U-52333  
 Legal Desc. 1320' FNL, 660' FEL Sec. 9 Twp 39S Rge 25E  
 KB Elev 5877' GL Elev 5865' TD 5825' PBTD --  
 Spud Date 9/21/84 Rig Released 10/9/84 Completion Date 10/9/84

IP:

Casing Size	Hole Size	From	To	Wt., Gr., Etc.
8-5/8"	11"	0'	3883.98	32#, K-55; 24#, J-55 DV tool @ 1415.41

Surface Casing Cement:

1st Stage: 840 sxs cement  
 2nd Stage: 510 sxs cement

Production Casing Cement:PerforationsFormationStatusRemarks

5800'-5685', 30 sxs Class "B" cement; 5616'-5459', 45 sxs Class "B" Cement; 3943'-3830', 50 sxs Class "B" cement; 37'-0', 10 sxs cement

PBTD  
TD

9-2 Navajo Federal  
 San Juan County, UT  
 Kiva Field  
 3/9/87



## WELL DIAGRAM - MECHANICAL DETAIL

Well No. 42-9 Navajo Fed. Field Kiva Formation  
 County San Juan State UT CA#/Federal Lease #  
 Legal Desc. SENE, 1850' FNL, 1140' FEL Sec. 9 Twp 39S Rge 25#  
 KB Elev 4868' GL Elev 4857' TD 5842' PBDT ±3135'  
 Spud Date 11/1/86 Rig Released 11/14/86 Completion Date 11/14/86

IP:

Temp. abandoned oil well

Casing Size	Hole Size	From	To	Wt., Gr., Etc.
13-3/8"	17-1/2"	0	84	54.5#, K-55, ST&C
9-5/8"	12-1/4"	0	1532	32.3#, H-40, ST&C
		1532	1535	Stage collar
		1535	2383	32.3#, K-55, ST&C
		2383	3237	36.0#, K-55, ST&C
		3237	3238	Float collar
		3238	3285	36#, K-55, ST&C
		3283	3285	Float shoe

## Surface Casing Cement:

95 sxs Class "B" cement, 3% CaCl<sub>2</sub>

## Production Casing Cement:

Stage 1: 420 sxs Class "B", 16% gel, 3% salt, 0.3% Dispursand; tail w/135 sxs Class "B", 2% CaCl<sub>2</sub>Stage 2: Circ out 40 bbls cement. 380 sxs Class "B"; tail by 55 sxs Class "B", 16% gel, 35 salt, 0.3% Dispursant. Circ 20 bbls cement. Top out w/50 sxs Class "B", 3% CaCl<sub>2</sub>; top out again w/50 sxs Class "B", 3% CaCl<sub>2</sub>

## Perforations

## Formation

## Status

## Remarks

Class "B" Lead cement: 13 gal H<sub>2</sub>O/sx, 12.6 ppg, 2.33 ft<sup>3</sup>/sxClass "B" Tail cement: 5.2 gal H<sub>2</sub>O/sx, 15.6 ppg, 1.18 ft<sup>3</sup>/sx

Stage 1 Vols: 174 + 28 = 202 - 40 = 162 bbls

Stage 2 Vols: 158 + 12 = 170 - 20 = 150 + 21 = 171 bbls.

Plug w/175 sxs "B" neat (200 Ft<sup>3</sup>) @ 5542'-5820'. Set Baker BP in 9-5/8"Casing at 3201'. Cap w/25 sxs (29 Ft<sup>3</sup>) "B" neat

PBDT

TD

LIST OF OPERATORS OR OWNERS AND SURFACE OWNERS  
WITHIN 1/2 MILE OF PROPOSED KIVA FIELD WATERFLOOD  
PROJECT, SAN JUAN COUNTY, UTAH (STATE REQ.# 501-b-8)

<u>LEASE NUMBER</u>	<u>LEASE DESCRIPTION</u>	<u>WORKING INTEREST OWNER</u>	<u>(%)</u>	<u>SURFACE OWNER</u>
<u>FEDERAL TRACTS</u>				
U-52333	T39S - R25E Sec. 4: ALL Sec. 9: ALL	Meridian Oil Inc. 5613 DTC Parkway Englewood, CO. 80111	75%	USA-BLM
		BWAB 1984-1986 Joint Venture 1801 California St., Ste. 1000 Denver, CO. 80202	25%	
U-58728	T39S - R25E Sec. 5: SE/4NE/4 E/2SE/4	Meridian Oil Inc.	75%	Navajo Indian Tribe
		BWAB 1884-86 Joint Vent.	25%	
U-57895	T39S - R25E Sec. 5: NE/4NE/4 W/2E/2 W/2	Meridian Oil Inc.	75%	Navajo Indian Tribe
U-12424	T39S - 25E Sec. 3: ALL	Texaco Inc. P.O. Box 2100 Denver, CO. 80201	50%	USA-BLM
		Donald B. Anderson Three Park Central Suite 1060 Denver, CO. 80202	25%	
		Chorney Oil Company 555 - 17th Street Suite 1000 Denver, CO. 80202	25%	
U-12426	T39S - 25E Sec. 10: ALL	Texaco Inc. P.O. Box 2100 Denver, CO. 80201	50%	USA-BLM
		Joan Chorney c/o Chorney Oil Co. 555 - 17th Street Suite 1000 Denver, CO. 80202	25%	
		Donald B. Anderson Three Park Central Suite 1060 Denver, CO. 80202	25%	
<u>UTAH STATE TRACT</u>				
ML-40303	T38S - R25E Sec. 32: ALL	Marathon Oil Company P.O. BOX 120 Casper, WY. 82602	100%	State of Utah

# MERIDIAN OIL

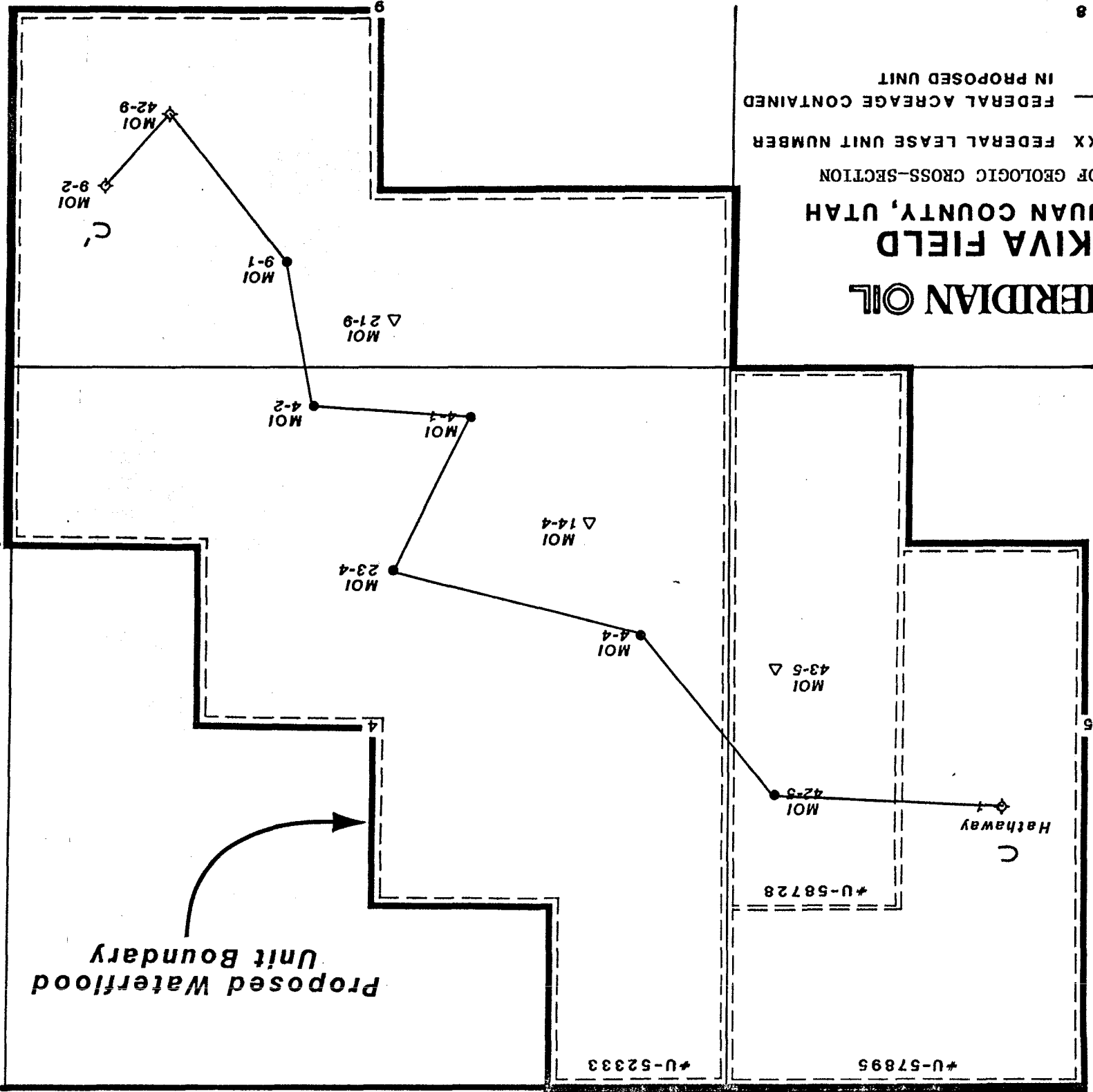
## KIVA FIELD SAN JUAN COUNTY, UTAH

LINE OF GEOLOGIC CROSS-SECTION

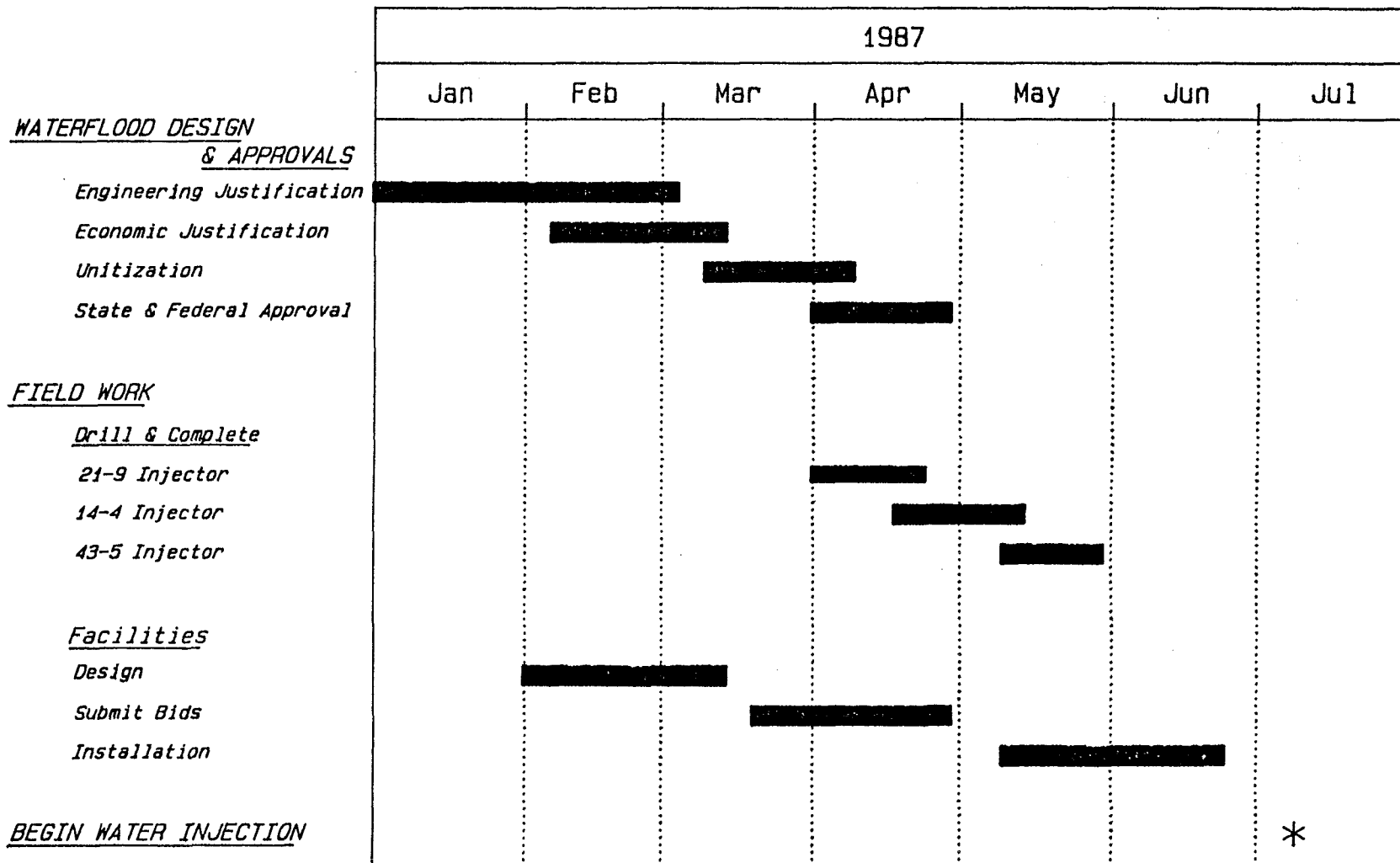
#U-XXXXX FEDERAL LEASE UNIT NUMBER

-----  
FEDERAL ACREAGE CONTAINED  
IN PROPOSED UNIT

Proposed Waterflood  
Unit Boundary



# KIVA FIELD DEVELOPMENT PLAN



# MERIDIAN OIL

March 16, 1987

**RECEIVED**  
MAR 18 1987

DIVISION OF  
OIL, GAS & MINING

Mr. Dan Jarvis  
Utah Department of Natural Resources  
Division of Oil, Gas and Mining  
Underground Injection Department  
UIC Department  
3 Triad Center  
Suite 350  
Salt Lake City, Utah 84180-1203

Dear Mr. Jarvis:

At Dan Sodersten's request, I have enclosed copies of Petroleum Information's GEOCOM<sub>tm</sub> scout tickets on the wells in 5-39S-25E drilled in 1951-1952. This information is furnished in compliance with our application for water injection at Kiva Field, San Juan County, Utah.

This information provided appears to show three spud attempts.

Hathaway & Glasco 1 Federal	TD 372'	1650' FNL	1980' FEL
Hathaway 1-A Federal	TD 7621'	1700' FNL	2055' FEL (probably)
		1650' FNL	1980' FEL (GEOCOM <sub>tm</sub> )
Glasco 1-B USA	TD 7621'	2037' FSL	2037' FEL

Only one set of well logs can be found for this area. The Gamma Ray Neutron for the Hathaway well is on the geologic cross section that has been provided. It is my opinion that one well was junked and abandoned at 372' and only one deep offset was drilled.

If any additional information is needed, please do not hesitate to give me a call.

Regards,

*C. L. Crawley*  
C. L. Crawley  
Sr. Staff Geologist

CLC/pe

Enclosures

cc: Dan Sodersten

*Well Data for  
Hathaway Glasco # 16  
Well was drilled Prior  
to OGCC. and  
there is no existing file*

## GEO-COM (TM)

PAGE 1

STATE : UTAH  
COUNTY : SAN JUAN  
FIELD : HATCH  
CLASS : INITIAL - WF FINAL - WF  
FINAL STATUS: D&A  
CONTRACTOR:

OPERATOR: HATHAWAY & GLASCO  
WELL: 1 FEDERAL  
API NO.: 43-037-006218-00 00

TWP : 39S RGE : 25E  
SEC : 5  
SPOT : SW NE  
FOOT: 1650 FNL 1980 f

SPUD: 07/12/1951

COMP: 08/15/1951

GROUND ELEV: 4756 GR

TD: DTD 372

CASING: CSG 12 @ 309 W/ 200 11 3/4 W/ 154

INITIAL POTENTIAL: IPF OBOPD 2000BW

PROD TESTS: PTF OBOPH 70BW

*junked &  
abandoned*

*~~Horizontal Spout tickets~~  
probably rig skidded  
to 1700' fnl  
2055 fcl*

\* SUBSEA CALCULATED ON GROUND ELEVATION IF REFERENCE ELEVATION NOT AVAILABLE  
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## GEO-COM (TM)

PAGE 1

STATE : UTAH  
 COUNTY : SAN JUAN  
 FIELD : WILDCAT  
 CLASS : INITIAL - WF FINAL - WF  
 FINAL STATUS: D&A-0  
 CONTRACTOR: HATHAWAY BROTHERS

OPERATOR: GLASCO L M ETAL  
 WELL: 1-B USA  
 API NO.: 43-037-006222-00 00

TWP : 39S RGE : 25E  
 SEC : 5  
 SPOT: NE NE NE  
 FOOT: 2037 FSL 2037 FI

SPUD: 08/21/1951

COMP: 01/16/1952

GROUND ELEV: 4756 GR  
 REF. ELEV : 4765 DF

TD: DTD 7621  
 FM TD LEADVILLE

CASING: CSG 16 @ 65 W/ 35 11 3/4 @ 526 W/ 375  
 CSG 8 5/8 @ 4574 W/ 500

TOPS:	FORMATION	DEPTH	SUSSEA
LOG	BLUFF SD	338	4427
LOG	SUMMERVILLE	513	4252
LOG	NAVAJO	555	4210
LOG	KAYENTA	690	4075
LOG	WINGATE	738	4027
LOG	ENTRADA	742	4023
LOG	CARMEL	968	3757
LOG	CHINLE	1120	3645
LOG	SHINARUMP	2370	2395
LOG	MOENKOPI	2480	2285
LOG	419CTLR	2717	2048
LOG	RICO	4538	227
LOG	HERMOSA	4610	155
LOG	PARADOX /SH/	5332	-567
LOG	ANHYDRITE	5405	-640
LOG	SALT	5765	-1000
LOG	MOLAS	7354	-2589
LOG	LEADVILLE	7455	-2690
SPL	MORRISON	0	4765
SPL	BLUFF SD	252	4513
SPL	CHINLE	1090	3675
SPL	SHINARUMP	2350	2415
SPL	MOENKOPI	2510	2255
SPL	RICO	4550	215
SPL	HERMOSA	4625	140
SPL	PARADOX /SH/	5340	-575
SPL	ANHYDRITE	5420	-655
SPL	SALT	5770	-1005
SPL	MOLAS	7354	-2589
SPL	LEADVILLE	7464	-2699



W60

STATE : UTAH  
COUNTY : SAN JUAN  
FIELD : WILDCAT  
CLASS : INITIAL - WF FINAL - WF  
FINAL STATUS: D&A-0  
CONTRACTOR: HATHAWAY BROTHERS

OPERATOR: GLASCO L M ETAL  
WELL: 1-B USA  
API NO.: 43-037-006222-00 00

TWP : 39S RGE : 25E  
SEC : 5  
SPOT: NE NE NE  
FOOT: 2037 FSL 2037 FWL

DSTS: DST 01 5630- 5730 LEADVILLE S  
REC 45FT GCM  
INIT OP 1H30M FFP 90  
FSIP 150 30M IHP 2800

DST 02 5730- 6530 LEADVILLE S  
REC 45FT SGCM  
INIT OP 1H35M FFP 95  
FSIP 1500

PROD TESTS: PTF 080PH 600BW  
NAVAJO OPENHOLE W/630/FT 630- 662

CORES: CORE 01 4963- 5015 REC 52.00FT HERMOSA  
52 SANDSTONE & LM, BROKEN  
CORE 02 5015- 5105 REC 00.00FT HERMOSA  
NO DESCRIPTION GIVEN  
CORE 03 5635- 5667 REC 27.00FT ANHYDRITE  
22 SHALE, BLACK, CALC CARB  
3 ANHYDRITE  
GAS ODOR IN 1ST 5 FT OIL STAIN AT 5658  
CORE 04 5667- 5717 REC 47.00FT ANHYDRITE  
3.5 ANHYDRITE  
8.5 DOLO, LIMESTONE /1ST 6 FT GOOD ODOR/  
2 ANHYDRITE  
1 SH, CALC CARB, BLACK, DENSE  
8 ANHYDRITE, WHITE & GRY  
14 DOLOMITE, BROWN, DENSE, LM, GOOD ODOR THROUGHOUT  
OIL STAINS AT 5710  
CORE 05 5714- 5730 REC 16.00FT ANHYDRITE  
6 DOLOMITE, BROWN, DENSE, LM, SLI ODOR  
11 SHALE, CARB CALC, BLACK  
CORE 06 7414- 7459 REC 45.06FT MOLAS  
45 LIMESTONE, GRY, DENSE, TITE, W/IRREG PART OF  
VARIGATED SH



## GEO-COM (TM)

CONTINUED PAGE 3

STATE : UTAH  
COUNTY : SAN JUAN  
FIELD : WILDCAT  
CLASS : INITIAL - WF FINAL - WF  
FINAL STATUS: D&A-D  
CONTRACTOR: HATHAWAY BROTHERS

OPERATOR: GLASCO L M ETAL  
WELL: 1-B USA  
API NO.: 43-037-006222-00 00

TWP : 39S RGE : 25E  
SEC : 5  
SPOT: NE NE NE  
FOOT: 2037 FSL 2037 FWL

- CORE 07 7459- 7491 REC 32.00FT LEADVILLE  
5 LIMESTONE, GRY, DENSE, TITE W/IRREG PART OF  
VARIGATED RED SH  
27 LIMESTONE, LITE TO DARK GRY, FINE-COARSE GRAINED  
SOME PPP, VERT & IRREG FRAC W/ANHY STYLO, TITE FRACS  
IN BOTTOM 10 FT, COULD HAVE CONTAINED BLACK SULF  
INTERLAMS
- CORE 08 7491- 7497 REC 05.00FT LEADVILLE  
3 LIMESTONE, BROWN-GRY, DENSE W/VERT FRAC  
2 SANDSTONE, BUFF, FINE TO MED GRAINED NON CALC, GOOD  
PORO, DEAD OIL STAIN
- CORE 09 7497- 7507 REC 11.00FT LEADVILLE  
1 SANDSTONE, BUFF, FINE TO MED GRAINED  
10 LIMESTONE, LITE GRY, DENSE TO FINELY XLYN, FRAC  
IRREG FOSS /HORN CORAL/ PORO FAIR IN PART, SOME VUG
- CORE 10 7507- 7561 REC 54.00FT LEADVILLE  
30 LIMESTONE, LITE GRY, DENSE TO FINELY XLYN, PORO  
ALONG IRREG FRAC, INNER CRY, SOME HORN CORAL, STYLO  
1 DOLOMITE, DIRTY, GRY, FINELY CRY, W/DISSIMINATED  
ANHY  
6 LIMESTONE, AS ABOVE W/VERT FRACS  
2 DOLOMITE, LITE GRY, DENSE TO FINELY CRY, WET, FAIR  
PORO  
13 LIMESTONE IN DOLO, LITE TO DARK GRY, FINE TO  
COARSE CRY, DISSEMINATED ANHY, WHITE CRY, MINOR  
CALC IN LAST FOOT
- CORE 11 7561- 7608 REC 47.00FT LEADVILLE  
1 DOLOMITE, DARK GRY, DENSE, IRREG FRAC, SOME ANHY  
10 LIMESTONE, LITE GRY, FINELY CRY, TITE, VERT FRACS  
FOSS, PELECOPODS  
1 DOLOMITE, LITE GRY, FINELY XLYN, FAIR PORO, IRREG  
FRACS, BLACK STAINS ALONG FRACS  
10 LIMESTONE, LITE GRY, COARSLY XLYN, FAIR INNER-XLYN  
PORO, VERT FRACS, IRREG DARK STAIN THROUGHOUT, NOT  
OIL

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## GEO-COM (TM)

CONTINUED PAGE 4

STATE : UTAH  
COUNTY : SAN JUAN  
FIELD : WILDCAT  
CLASS : INITIAL - WF FINAL - WF  
FINAL STATUS: D&A-0  
CONTRACTOR: HATHAWAY BROTHERS

OPERATOR: GLASCO L M ETAL  
WELL: 1-B USA  
API NO.: 43-037-006222-00 00

TWP : 39S RGE : 25E  
SEC : 5  
SPOT: NE NE NE  
FOOT: 2037 FSL 2037 FWL

0.5 DOLOMITE, W/ANHY, DARK GR, IRREG FRAC  
6.5 LIMESTONE, AS ABOVE  
18 DOLOMITE, LITE TO DARK GR, FROM VERY DENSE TO  
FINELY XLYN, GOOD PORO, MOSTLY VUG, IRREG FRAC  
7600

CORE 12 7608- 7613 REC 05.00FT LEADVILLE  
5 CLAY, RED & RUNNY

CORE 13 7613- 7621 REC 00.00FT LEADVILLE  
LOST CORE

DRILLING DATA : 7464- 7491 LEADVILL FIGRN 7494- 7497 LEADVILL GIGRN  
7498- 7507 LEADVILL FVUG 7507- 7537 LEADVILL F  
7544- 7548 LEADVILL F 7572- 7583 LEADVILL FIXLN  
7590- 7608 LEADVILL GVUG

## GEO-COM (TM)

PAGE 1

STATE : UTAH  
 COUNTY : SAN JUAN  
 FIELD : HATCH  
 CLASS : INITIAL - WF FINAL - WF  
 FINAL STATUS: D&A-O  
 CONTRACTOR:

OPERATOR: HATHAWAY DRILLING  
 WELL: 1-A FEDERAL  
 API NO.: 43-037-006217-00 00

TWP : 39S RGE : 25E  
 SEC : 5  
 SPOT : SW NE  
 FOOT : 1650 FNL 1980 FI

SPUD: 08/24/1951

COMP: 01/24/1952

REF. ELEV : 4764 DF

TD: DTD 7621  
 FM TD MISSISSIPPIAN

CASING: CSG 10 3/4 @ 526 W/ 375 8 @ 4575 W/ 500

TOPS: FORMATION DEPTH SUBSEA

LOG	HERMOSA	4620	144
LOG	PARADOX /SH/	5325	-561
LOG	ANHYDRITE	5415	-651
LOG	SALT	5770	-1006
LOG	MISSISSIPPIAN	7410	-2646
SPL	SALT	6910	-2146

DSTS: DST 01 5630- 5730 ANHYDRITE S  
 REC 45FT SGCM  
 INIT OP 1H30M FFP 90  
 FSIP 150 IHP 2800

CORES:

CORE 01 4960- 5051 REC 52.00FT HERMOSA

CORE 02 5105- 5220 REC 00.00FT HERMOSA  
 LIMESTONE W/SS STREAKS AMOUNT OF RECOVERY NOT GIVEN

CORE 03 5635- 5667 REC 27.00FT ANHYDRITE  
 22 SHALE, BLACK, CALC CARB  
 0.25 ANHYDRIT  
 0.82 DOLOMITE LIMESTONE, HARD, GRY, W/GOOD GAS ODOR  
 IN TOP 5 INCHES & SLI OIL STAIN

CORE 04 5667- 5714 REC 37.00FT ANHYDRITE  
 3.5 ANHYDRIT  
 8.5 DOLOMITE LIMESTONE  
 2 ANHYDRITE  
 1 SHALE, GRY  
 8 ANHYDRITE, WHITE  
 14 LIMESTONE, WHITE, DENSE, W/GOOD OIL STAIN AT 5710

CORE 05 5714- 5730 REC 16.00FT ANHYDRITE

## GEO-COM (TH)

CONTINUED PAGE 2

STATE : UTAH  
COUNTY : SAN JUAN  
FIELD : HATCH  
CLASS : INITIAL - WF FINAL - WF  
FINAL STATUS: D&A-0  
CONTRACTOR:

OPERATOR: HATHAWAY DRILLING  
WELL: 1-A FEDERAL  
API NO.: 43-037-006217-00 JO

TWP : 39S RGE : 25E  
SEC : 5  
SPOT: SW NE  
FOOT: 1650 FNL 1980 FE

6 LIMESTONE, DOLO, BROWN, W/SLI OIL ODOR

CORE 06 7414- 7459 REC 45.00FT PARADOX /SH/  
45 LIMESTONE, BROWN GREEN, DENSE, TITE, W/RED & GREEN  
SH

CORE 07 7459- 7491 REC 32.00FT MISSISSIPPIAN  
5 LIMESTONE, AS ABOVE  
27 LIMESTONE, LITE-DARK GRY, W/SOME PPP W/IRREG  
FRACTURING, W/ANHY STYOLITIC TYPE FRAC IN BOTTOM 10  
FEET, FINE TO COARSE XLYN

CORE 08 7497- 7507 REC 11.00FT MISSISSIPPIAN  
1 LIMESTONE, AS ABOVE  
10 LIMESTONE, LITE GRY, DENSE FINE XLYN, FOSS W/FAIR  
VUG PORO

CORE 09 7507- 7561 REC 54.00FT MISSISSIPPIAN  
30 LIMESTONE, LITE GRY, DENSE, FINE XLYN, PORO ON  
FRAC, INTER-XLYN TYPE W/HORN CORALS  
1 DOLOMITE, GRY, FINE XLYN W/ANHY  
6 LIMESTONE, AS ABOVE W/VERT FRAC  
2 DOLOMITE, GRY, VERY PORO W/DEAD OIL STAIN  
THROUGHOUT  
2 DOLOMITE, LITE GRY, DENSE, FINE XLYN, WET, FAIR  
PORO  
13 LIMESTONE, DOLOMITIC, LITE-DARK-GRY, FINE-COARSE  
XLYN W/DISSEMINATED ANHY, IRREG FRAC, FOSS W/SMALL  
VEINS OF CACCINE IN BOTTOM

CORE 10 7561- 7608 REC 47.00FT MISSISSIPPIAN  
1 DOLOMITIC, DARK-GRY DENSE, IRREG FRAC W/SOME ANHY  
10 LIMESTONE, LITE GRY, FINE XLYN, TITE VERT FRAC  
FOSS  
1 DOLOMITE, LITE GRY, FINE XLYN, FAIR PORO, IRREG  
FRAC, BLACK STAIN ALONG FRAC  
10 LIMESTONE, LITE GRY, COARSE XLYN, FAIR INTER-XLYN  
PORO, VERT FRAC, IRREG DARK STAIN THROUGHOUT  
0.5 DOLOMITE W/ANHY, DARK GRY, IRREG FRAC  
6.5 LIMESTONE, AS ABOVE

## GEO-COM (TM)

CONTINUED PAGE 3

STATE : UTAH  
COUNTY : SAN JUAN  
FIELD : HATCH  
CLASS : INITIAL - WF FINAL - WF  
FINAL STATUS: D&A-0  
CONTRACTOR:

OPERATOR: HATHAWAY DRILLING  
WELL: 1-A FEDERAL  
API NO.: 43-037-006217-00 00

TWP : 39S RGE : 25E  
SEC : 5  
SPOT: SW NE  
FOOT: 1650 FNL 1980 I

18 DOLOMITE, DARK GRY, DENSE, FINE XLYN, GOOD PORO  
MOSTLY VUGGY, IRREG FRAC ASSOCIATED W/WHITE GRANULAR

CORE 11 7608- 7613 REC 00.00FT MISSISSIPPIAN  
NO DESCRIPTION GIVEN

CORE 12 7613- 7621 REC 00.00FT MISSISSIPPIAN  
NO RECOVERY

LOGS: ES GR

PI REFERENCE #: A00049

DRILLING DATA : 7464- 7491 MISSISSI FIGRN 7498- 7507 MISSISSI FVUG  
7507- 7537 MISSISSI FIXLN 7544- 7548 MISSISSI FIXLN  
7572- 7583 MISSISSI FIXLN 7590- 7608 MISSISSI GVUG

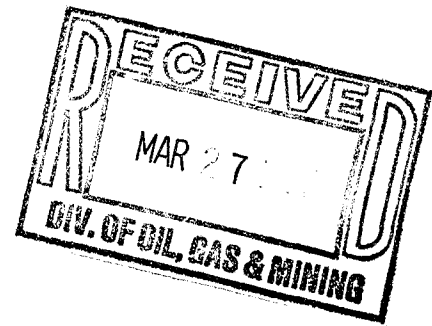
ADDITIONAL DATA: PART INTERESTS- L M GLASCO

# MERIDIAN OIL

March 24, 1987

State of Utah Natural Resources  
Oil, Gas and Mining  
355 W. North Temple  
3 Triad center, Ste 350  
Salt Lake City, Utah 84180-1203

Attention: Arlene Sollis



Re: Application for Permit to Drill  
14-4 Navajo-Federal  
SWSW Section 4-39S-25E  
Federal Lease No. U-52333  
San Juan County, Utah  
Permit No. 43-037-31265

Gentlemen:

Enclosed are three copies of Form 3160-3, Application for Permit to Drill with attachments for the above referenced location. This location was moved from 790' FSL - 510' FWL to 1150' FSL - 1110' FWL.

Please cancel Permit No. 43-037-31265, which is due to expire April 28, 1987 and re-permit as per the attached Application for Permit to Drill.

If you have any questions, please do not hesitate to call me at 406-256-4122.

Sincerely,

S. S. Nelson  
Sr. Operations Technician

/ssn/1423N

Encl

**CONFIDENTIAL**  
UNITED STATES

SUBMIT IN TRIPLICATE\*  
(Other instructions on  
reverse side)

Form approved.  
Budget Bureau No. 1004-0136  
Expires August 31, 1985

DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK

DRILL ☒

DEEPEN ☐

PLUG BACK ☐

b. TYPE OF WELL

OIL  
WELL ☒

GAS  
WELL ☐

OTHER Injection

SINGLE  
ZONE ☐

MULTIPLE  
ZONE ☐

2. NAME OF OPERATOR

MERIDIAN OIL INC.

3. ADDRESS OF OPERATOR

P. O. Box 1855, Billings, MT 59103

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)\*

At surface

SWSW (1150' FSL - 1110' FWL)

At proposed prod. zone

Same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE

6 miles east Hatch Trading Post

15. DISTANCE FROM PROPOSED\*

LOCATION TO NEAREST

PROPERTY OR LEASE LINE, FT.

(Also to nearest drig. unit line, if any)

1110'

18. DISTANCE FROM PROPOSED LOCATION\*

TO NEAREST WELL, DRILLING, COMPLETED,  
OR APPLIED FOR, ON THIS LEASE, FT.

900'

16. NO. OF ACRES IN LEASE

2920.8

17. NO. OF ACRES ASSIGNED  
TO THIS WELL

40

19. PROPOSED DEPTH

5765'

20. ROTARY OR CABLE TOOLS

Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)

4867' GL (graded)

22. APPROX. DATE WORK WILL START\*

April, 1987

23.

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17-1/2	13-3/8	48#	80'	Redi-Mix to sfc.
12-1/4	9-5/8	36#	3200'	Cement to sfc w/1750 sx.
8-3/4	5-1/2	15.5#	5765'	Single stage, top of cmt @ 2750 Caliper log + 40% excess, "B" Lite.

NOTE:

Class II Water Injection Well Application to follow.

Oil and Gas Order #1

Attachments:

Survey Plat

Eight Point Drilling Program

Thirteen Point Surface Use Plan

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED

*[Signature]*

TITLE

Sr. Drilling Engineer

DATE

3/24/87

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

APPROVED BY THE STATE  
OF UTAH DIVISION OF  
OIL, GAS, AND MINING

APPROVED BY

TITLE

DATE 5-12-87

CONDITIONS OF APPROVAL, IF ANY:

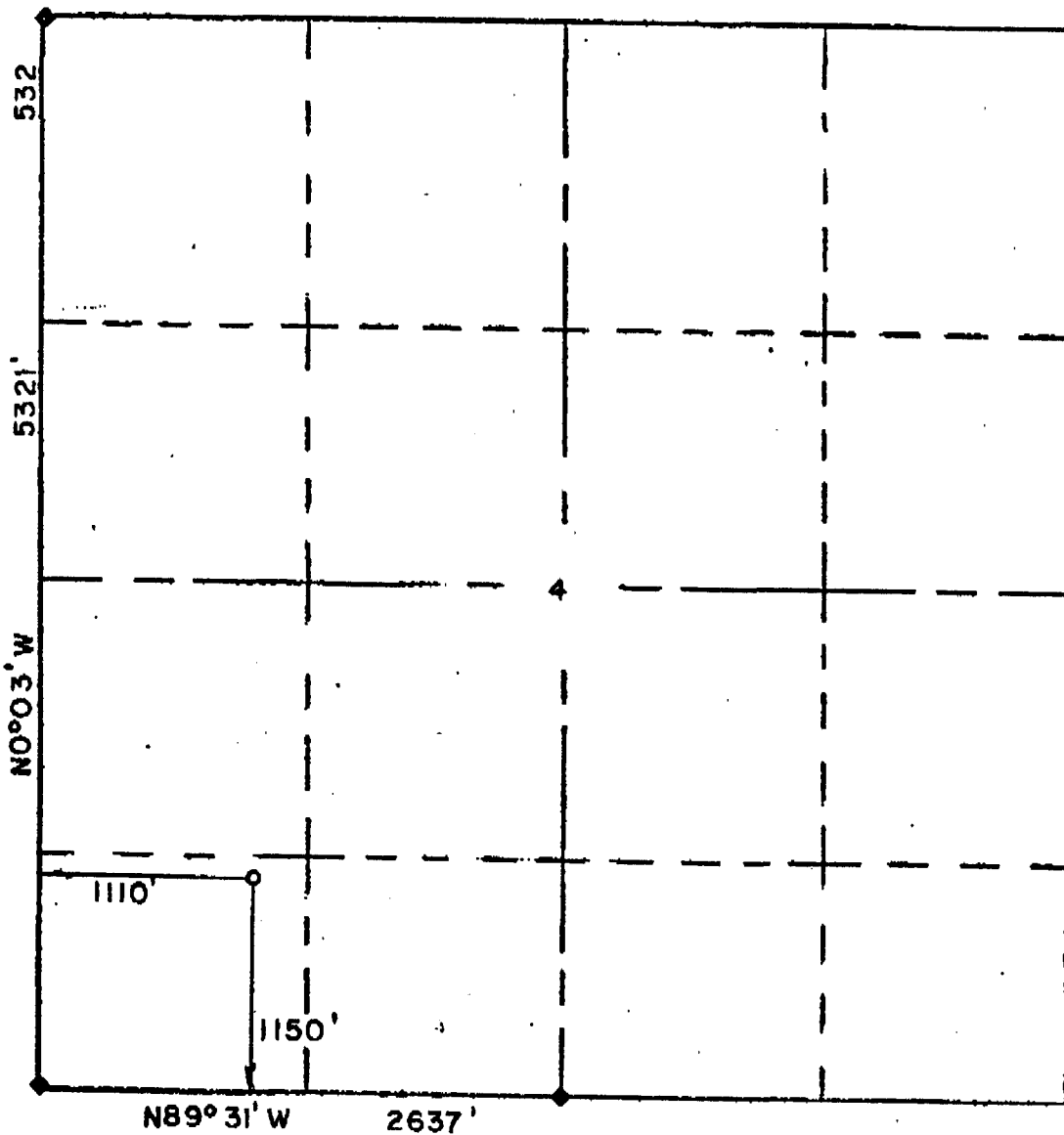
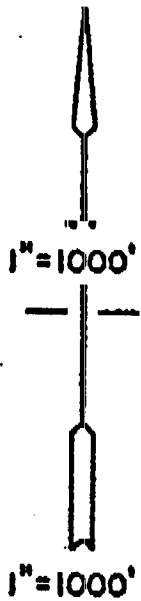
BY: *[Signature]*

WELL SPACING: 302.1

\*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

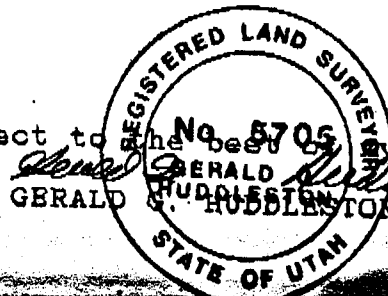
WELL LOCATION PLAT



WELL LOCATION DESCRIPTION:

MERIDIAN OIL  
14-4 Navajo-Federal  
1150' FS & 1110' FW  
Section 4, T.39 S., R.25 E., SLM  
San Juan County, Utah  
4868' ground elevation  
Alternate: 790' FS & 510' FW, 4788' grd.

The above is true and correct to the best of my knowledge.  
revised  
Feb. 17, 1987





1497N/

OIL AND GAS ORDER NO. 1

MERIDIAN OIL INC.

LEASE NAME: 14-4 Navajo-Federal  
LEASE NO. U-52333  
LOCATION: SWSW Section 4-39S-25E  
1150' FSL - 1110' FWL  
San Juan County, Utah  
Kiva Field

A. EIGHT POINT DRILLING PROGRAM

1. & 2. Estimated Tops:

Morrison	Surface	
Entrada	581	
Navajo	766	fresh water
Chinle	1463	
Shinarump	2318	
Cutler	2543	
Hermosa	4423	
Upper Ismay	5395	oil
A Shale	5527	
Lower Ismay	5548	
Desert Creek	5633	oil
Chimney Rock	5718	
Akah	5741	
TD	5765	

3. Pressure Control Equipment:

- a. A 1500 psi WP and 3000 psi test double gate preventer equipped with blind and pipe rams.
- b. BOP systems will be consistent with API RP 53. Pressure tests will be conducted before drilling out from under all casing strings which are set and cemented in place. Blowout preventor controls will be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned. Preventers will be inspected and operated at least daily to ensure good mechanical working order, and this inspection recorded on the daily drilling report. Preventers will be pressure tested before drilling casing cement plugs.

4. Casing program:

Anticipated cement tops will be reported as to depth, not the expected number of sacks. The San Juan Resource Area will be notified 1 day before running casing strings and cement.

<u>Hole Size</u>	<u>Size</u>	<u>Depth</u>	<u>Casing</u>				<u>Cementing Program</u>
			<u>Weight</u>	<u>Grade</u>	<u>Thrd</u>	<u>Cond</u>	
17-1/2	13-3/8	80	48#	H-40	ST&C	New	Redi-Mix to surface.
12-1/4	9-5/8	3,200	36#	K-55	ST&C	New	Cement to sfc w/1750 sx
8-3/4	5-1/2	5,765	15.5#	K-55	LT&C	New	Single stage, top of cmt @ 2750'. Caliper log + 40% excess. "B" Lite (35/65/6) + 1/4#/sx Flocele & Class "B" + fluid loss additive.

5. Proposed drilling mud program:

A water base mud system from surface to TD. Maximum anticipated mud weight is 10#/gallon.

A mud logging unit will be on location from 3250' to TD.

6. Testing program:

Lower Desert Creek - Possible  
 Upper Ismay - Probable

Logging program:

Cal/GR/DLL/MSFL Base surface casing to TD (GR to surface)  
 Cal/GR/Sonic Base surface casing to TD (GR to surface displays)  
 Cal/GR/CNL/Lithoden 5200' to TD  
 Dipmeter: If Desert Creek indicates productive.

Coring program:

None planned.

Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (Form 3160-4) will be submitted not later than 30 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3164. Two copies of all logs, core descriptions, core analysis, well-test data, geologic summaries, sample description, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, will be filed with Form 3160-4. If requested, samples (cuttings, fluids, and/or gases) will be submitted to the District Manager.

7. Anticipated abnormal BHP or BHT:

No abnormal BHP or BHT are expected in this well.

Potentially hazardous conditions anticipated:

No H<sub>2</sub>S has been found, reported or is known to exist at these depths in this area.

8. Anticipated Starting Dates and Notifications of Operations

The operator will contact the San Juan Resource Area at 801-587-2201, 48 hours before beginning any dirt work.

No location will be constructed or moved, no well will be plugged, and no drilling or workover equipment will be removed from a well to be placed in a suspended status without prior approval of the District Manager. If operations are to be suspended, prior approval of the District Manager will be obtained and notification given before resumption of operations.

The spud date will be reported orally to the San Juan Area Manager, a minimum of 24 hours before spudding. A Sundry Notice (Form 3160-5) will be sent within 24 hours after spudding, reporting the spud date and time. The Sundry will be sent to the District Manager. If the spudding is on a weekend or holiday, the Sundry will be submitted on the following regular work day.

In accordance with Onshore Oil and Gas Order No. 1, this well will be reported on Form 9-329 "Monthly Report of Operations," starting with the month in which operations begin and continue each month until the well is physically plugged and abandoned. This report will be sent to the BLM District Office, P. O. Box 970, Moab, Utah 84532.

Immediate Report: Spills, blowouts, fires, leaks, accidents, or any other unusual occurrences shall be promptly reported to the Resource Area in accordance with requirements of NTL-3A.

If a replacement rig is planned for completion operations, a Sundry Notice (Form 3160-5) to that effect will be filed, for prior approval of the District Manager. All conditions of this approved plan are applicable during all operations conducted with the replacement rig. In emergencies, verbal approval can be given by the District Petroleum Engineer.

If the well is successfully completed for production, then the District Manager will be notified when the well is placed in a producing status. Such notification will be sent by telegram or other written communication, not later than 5 business days following the date on which the well is placed on production.

No well abandonment operations will begin without the prior approval of the District Manager. In the case of newly drilled dry holes or failures, and in emergencies, oral approval will be obtained from the District Petroleum Engineer. A "Subsequent Report of Abandonment" (Form 3160-5), will be filed with the District Manager, within 30 days following completion of the well for abandonment. This report will indicate where plugs were placed and the current status of surface restoration.

Final abandonment will not be approved until the surface reclamation work required by the approved APD or approved abandonment notice has been completed to the satisfaction of the San Juan Area Manager, or the appropriate surface manager.

Approval to vent/flare gas during initial well evaluation will be obtained from the District Office. This preliminary approval will not exceed 30 days or 50 MMCF gas. Approval to vent/flare beyond this initial test period will require District Office approval pursuant to guidelines in NTL-4A.

Upon completion of approved plugging, a regulation marker will be erected in accordance with 43 CFR 3162.6. The following information will be permanently beaded-on with a welding torch: Fed, well number, location by 1/4 1/4 section, township and range, Lease number.

A first production conference will be scheduled within 15 days after receipt of the first production notice. The San Juan Area Manager will schedule the conference.

Other: A separate rig will be used for completion operations.

The following may be inspected and/or witnessed:

1. The cementing and testing of surface casing.
2. (Dry Hole) Setting and testing of surface casing shoe plug.
3. (Depleted Producer) The setting and testing of plugs across the producing horizon and if applicable, the surface casing shoe plug and/or annulus (casing to formation) squeeze jobs.

Notify the San Juan Resource Area (Mike Wade) one day or on dry hole as soon as possible prior to the above at (801) 587-2201 (Home) (801) 587-2026 or if unable to reach Mike, call Moab District office Greg Noble at (801) 259-6111 (Home) (801) 259-8811.

B. THIRTEEN POINT SURFACE USE PLAN

1. Existing Roads (Yellow)

- a. Location of proposed well in relation to town or other reference point:  
6 miles east of Hatch Trading Post.
- b. Proposed route to location. (See attached Exhibit "1").
- c. Existing and new access shall be maintained in good or better condition.
- d. An encroachment permit will be obtained from the San Juan County Road Dept., (801) 587-2231, ext. 43.

2. Planned Access Roads (Blue)

- a. The maximum total width will be 30 feet for 1/4 mile.
- b. Maximum grade is 0%.
- c. There will be no turnouts.
- d. Road is centerline flagged.
- e. Road will be drained as needed.
- f. If well is drilled during wet winter conditions, surface materials may be required to avoid maintenance problems.

Surface disturbance and vehicular travel will be limited to the approved location and approved access route. Any additional area needed will be approved in advance by the San Juan Area Manager.

The access road will be water barred or brought to Class III Road Standards within 60 days of dismantling of the drill rig. If this time frame cannot be met, the San Juan Area Manager will be notified so that temporary drainage control can be installed along the access road.

The Class III Road Standards which ensure drainage control over the entire road through the use of natural, rolling topography; ditch turnouts; drainage dips; outslowing; crowning; low water crossing; and culverts will be determined at the appropriate field inspection.

3. Location of Existing Wells (1 mile radius)

- a. Existing wells in the area are shown on attached Exhibit "1".

4. Location of Existing and/or Proposed Facilities if Well is Productive

Battery facility is shown on attached Exhibit "4".

All permanent (on site for 6 months or longer) above ground facilities (including pump jacks) will be painted a flat, nonreflective, earthtone color to match the standard environmental colors, as determined by the Rocky Mountain 5-State Interagency Committee. All facilities will be painted within 6 months of installation. Facilities required to comply with the Occupational Safety and Health Act (OSHA) will be excluded. The color will be Desert Tan/Chesnut Brown trim.

All flowlines will be buried parallel to existing roads unless authorized otherwise by BLM.

If a tank battery is constructed on this lease, it will be surrounded by a dike of sufficient capacity to contain 1-1/2 times the storage capacity of the battery.

All loading lines will be placed inside the berm surrounding the tank battery.

All site security guidelines identified in 43 CFR 3162.7 regulations will be adhered to. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed.

All off-lease storage, off-lease measurement, or commingling on-lease or off-lease will have prior written approval from the District Manager.

Gas meter runs for each well will be located within 500 feet of the wellhead. The gas flowline will be buried from the wellhead to the meter and 500 feet downstream of the meter un or any production facilities. Meter runs will be housed and/or fenced.

The oil and gas measurement facilities will be installed on the well location. The oil and gas meters will be calibrated in place before any deliveries. Tests for meter accuracy will be conducted monthly for the first 3 months on new meter installations and at least quarterly thereafter. The San Juan Area Manager will be provided with a date and time for the initial meter calibration and all future meter proving schedules. A copy of the meter calibration reports will be submitted to the San Juan Area Manager. All meter measurement facilities will conform with the API standards for liquid hydrocarbons and the AGA standard for natural gas measurement.

##### 5. Location and Type of Water Supply

All water needed for drilling purposes will be obtained at a point: N 798.06 ft & E 1876.41 ft from SW corner of Section 28, T38S, R25E.

Use of water for this operation will be approved by obtaining a temporary use permit from the Utah State Engineer, (801) 637-1303 and by receiving permission from the landowner or surface management agency to use the land containing the water source.

6. Source of Construction Materials

Native soil materials from drilling location and access trail, which is available, will be used. Any additional materials needed will be hauled in from authorized commercial sources.

The use of materials under BLM jurisdiction will conform to 43 CFR 3610.2-3.

7. Methods for Handling Waste Disposal

The reserve pit will be lined with native clay or commercial bentonite sufficient to prevent seepage. At least half of the capacity will be in cut.

Three sides of the reserve pit will be fenced with four strands of barbed wire before drilling starts. The fourth side will be fenced as soon as the drilling is completed. The fence will be kept in good repair while the pit is drying.

A trash pit will be constructed near the mud tanks and dug at least six feet into solid undisturbed material. It will be totally enclosed with a fine wire mesh before the rig moves in. The road and pad will be kept litter free.

A burning permit is required for burning trash between May 1 and October 31. This can be acquired by contacting the State fire Warden, John Baker, at (801) 587-2705.

Produced waste water will be confined to a unlined pit for a period not to exceed 90 days after initial production. During the 90 day period, an application for approval of a permanent disposal method and location, along with the required water analysis, will be submitted for the District Manager's approval pursuant to Onshore Oil and Gas Order No. 3 (NTL-2B).

8. Ancillary Facilities

Camp facilities will not be required.

9. Well Site Layout

Rig layout is shown on attached Exhibit "9a".

Cuts and fills are shown on attached Exhibit "9b".

The reserve pit will be located on northwest end of well pad.

The top 6 inches of soil material will be removed from the location and stockpiled on the northeast side of well pad. Topsoil along the access will be reserved in place.

Access to the well pad will be from the east.

10. Reclamation:

- a. Immediately on completion of drilling, all trash and debris will be collected from the location and surrounding area. All trash and debris will be disposed of in the trash pit and will then be compacted and buried under a minimum of two feet of compacted soil.
- b. The operator/holder or his contractor will contact the San Juan Resource Area office in Monticello, Utah, (801) 587-2201, 48 hours before starting reclamation work that involves earthmoving equipment and upon completion of restoration measures.
- c. Before any dirt work to restore the location takes place, the reserve pit must be completely dry.
- d. All disturbed areas will be recontoured to blend as nearly as possible with the natural topography. This includes removing all berms and refilling all cuts.
- e. The stockpiled topsoil will be spread evenly over the disturbed area. All disturbed areas will be ripped 8 - 12 inches deep with the contour.

- f. Water bars will be built as follows to control erosion.

<u>Grade</u>	<u>Spacing</u>
2%	Every 200 feet
2-4%	Every 100 feet
4-5%	Every 75 feet
5+%	Every 50 feet

- g. Seed will be broadcast between October 1 and February 28 with the following prescription. A harrow or similar implement will be dragged over the area to assure seed cover.

<u>2</u>	lbs/acre Indian ricegrass ( <u>Oryzopsis hymenoides</u> )
<u>4</u>	lbs/acre Galleta ( <u>Hilaria jamesii</u> )
<u>2</u>	lbs/acre Fourwing saltbush ( <u>Atriplex canescens</u> )
<u>1</u>	lbs/acre Desert bitterbrush ( <u>Purshia glandulosa</u> )

- h. After seeding is complete, the stockpiled trees will be scattered evenly over the disturbed areas. The access will be blocked to prevent vehicular access.
- i. The reserve pit and that portion of the location and access road not needed for production or production facilities will be reclaimed as described in the reclamation section. Enough topsoil will be kept to reclaim the remainder of the location at a future date. This remaining stockpile of topsoil will be seeded in place using the prescribed seed mixture.



11. Surface Ownership: Federal  
Mineral Ownership: Federal

12. Other Information

A 18" culvert will be required on access.

There will be no change from the proposed drilling and/or workover program without prior approval from the District Manager. Safe drilling and operating practices must be used. All wells, whether drilling, producing, suspended, or abandoned will be identified in accordance with 43 CFR 3162.2.

"Sundry Notice and Report on Wells" (Form 3160-5) will be filed for approval for all changes of plans and other operations in accordance with 43 CFR 3164.

The dirt contractor will be provided with an approved copy of the surface use plan.

If subsurface cultural materials are exposed during construction, work in that spot will stop immediately and the San Juan Resource Area Office will be contacted. All people who are in the area will be informed by the operator/holder that they are subject to prosecution for disturbing archaeological sites or picking up artifacts. Salvage or excavation of identified archaeological sites will be done by a BLM approved archaeologist only if damage occurs.

This permit will be valid for a period of one year from the date of approval. After permit termination a new application will be filed for approval for any future operations.

Your contact with the District Office is: Greg Noble  
Office Phone: 801-259-6111 Address: P. O. Box 970, Moab, UT 84532

Resource Area Manager's Address and contacts:  
Address: P. O. Box 7, Monticello, UT 84535

Your contact is: Rich McClure  
Office Phone: 801-587-2141

13. Lessee or Operator's Field Representative and Certification

Meridian Oil Inc.

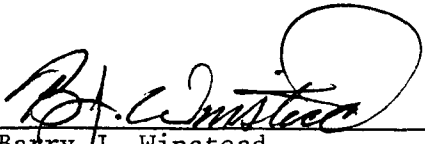
P. O. Box 1855

Billings, Montana 59103

1. Johnny L. Wright, Drilling Supt.	406-256-4175	406-252-2889
2. Steve Cruickshank, Drilling Engineer	406-256-4164	406-252-0701
3. Barry Winstead, Sr. Drilling Engineer	406-256-4030	406-656-7521
4. John Pulley, Completion Supt.	406-256-4124	406-259-6156

CERTIFICATION:

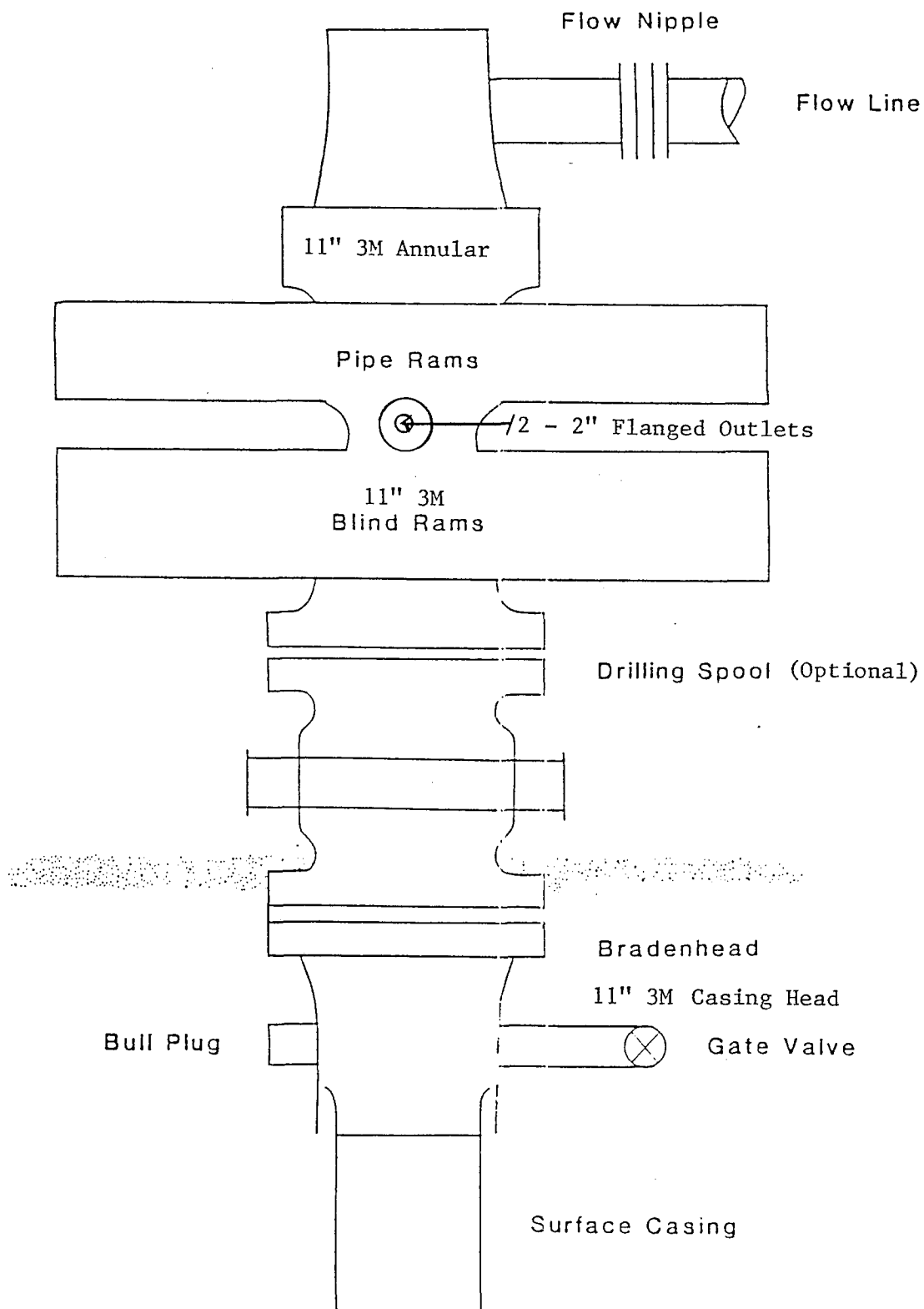
I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct, and, that the work associated with the operations proposed herein will be performed by Meridian Oil Inc. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

5cc   
Barry J. Winstead  
Sr. Drilling Engineer

3/24/87  
Date

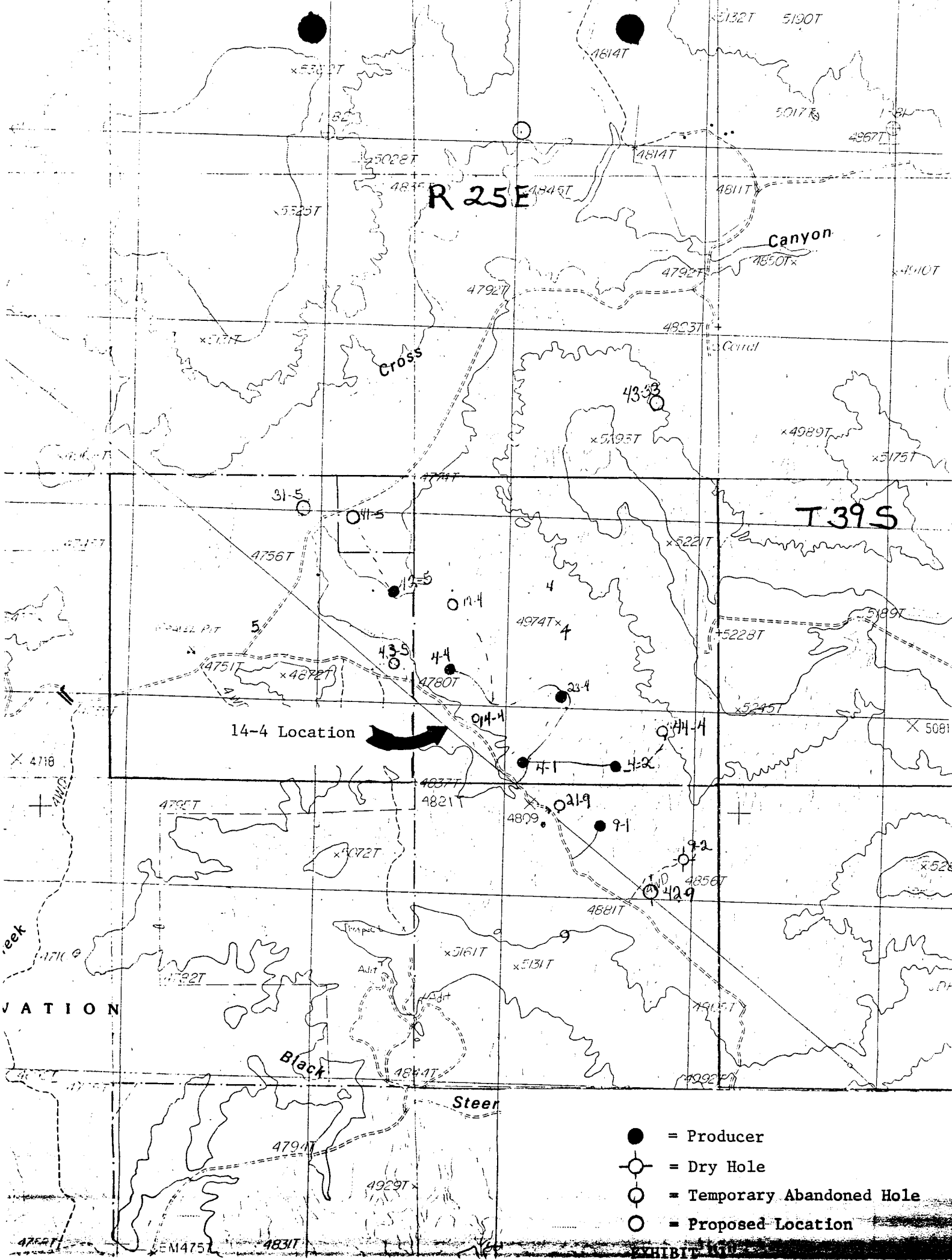
ssn

# TYPICAL B.O.P. INSTALLATION



Series 900 Double Gate B.O.P.,  
rated at 1500 psi Working Pressure.

When gas drilling operations begin a Shaffer type 50 or equivalent rotating head is installed on top of the flow nipple and the flow line is converted into a blowie line.





- = Producer
- = Dry Hole
- = Temporary Abandoned Hole
- = Proposed Location

A hand-drawn site plan of a well field. The plan shows a central cluster of structures including a 'WATER SUCTION TANK', 'SHAKER TANK', 'SUBSTRUCTURE', 'PUMP HOUSE', 'PIPE TUB', and 'PIPE RACKS'. To the left are 'WATER TANK', 'BOILER', 'FUEL TANK', and 'AIR TANK'. A 'MAIN PUMP' is located near the center. A 'RESERVE PIT' is marked at the top. The plan is overlaid with a grid of lines and labels such as 'C100', 'C190', 'C28', 'F50', 'F55', 'F60', 'F65', 'F70', 'F75', 'F80', 'F85', 'F90', 'F95', 'F100'. A 'CULVER' is shown at the bottom right, with an 'Access' point. A scale bar indicates '1" = 60'.

EXHIBIT "9a"  
Rig Layout

# WELL PAD CROSS-SECTION

14-4 Navajo Federal

Cut   
Fill 

Scales: 1" = 60' H.  
1" = 30' V.

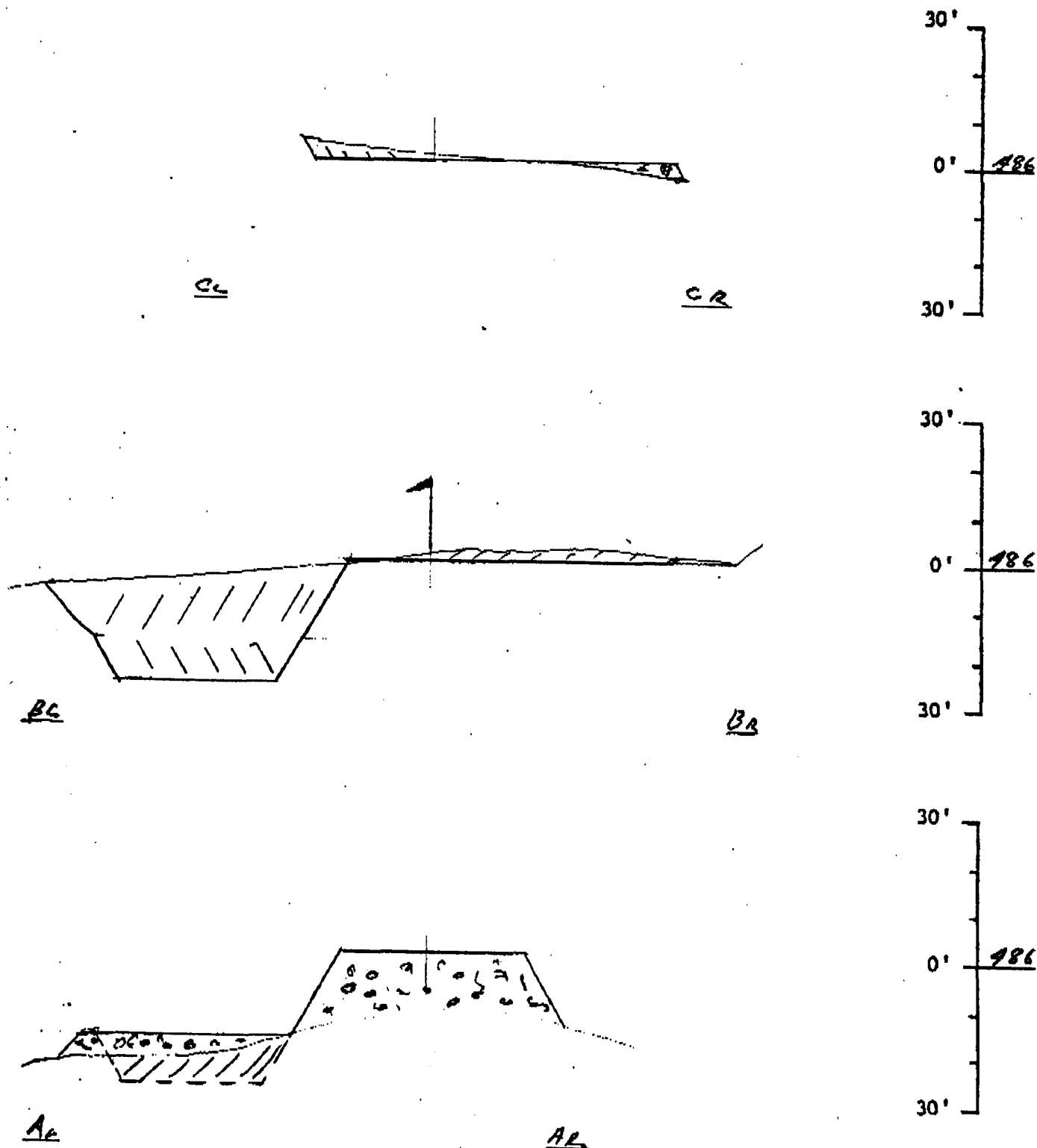


EXHIBIT "9b"  
Cross-Sections



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Norman H. Bangerter, Governor  
Dee C. Hansen, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

March 30, 1987

San Juan Record  
Legal Advertising  
P.O. Box 879  
937 East Highway 666  
Monticello, Utah 84535

Gentlemen:

RE: Cause No. UIC-094

Enclosed is a Notice of Application of Administrative Approval before the Division of Oil, Gas and Mining, Department of Natural Resources, State of Utah.

It is requested that this notice be published ONCE ONLY, as soon as possible, but no later than the 8th day of April, 1987. In the event that said notice cannot be published by this date, please notify me immediately by calling 538-5340.

Upon completion of this request, please send proof of publication and statement of cost to the Division of Oil, Gas and Mining, 355 West North Temple, 3 Triad Center, Suite 350, Salt Lake City, Utah 84180-1203.

Sincerely,

Marjorie L. Anderson  
Administrative Assistant

mfp

Enclosure



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Norman H. Bangerter, Governor  
Dee C. Hansen, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

March 30, 1987

Newspaper Agency Corporation  
Legal Advertising  
143 South Main - Mezzanine Floor  
Salt Lake City, Utah 84111

Gentlemen:

RE: Cause No. UIC-094

Enclosed is a Notice of Application of Administrative Approval before the Division of Oil, Gas and Mining, Department of Natural Resources, State of Utah.

It is requested that this notice be published ONCE ONLY, as soon as possible, but no later than the 8th day of April, 1987. In the event that said notice cannot be published by this date, please notify me immediately by calling 538-5340.

Upon completion of this request, please send proof of publication and statement of cost to the Division of Oil, Gas and Mining, 355 West North Temple, 3 Triad Center, Suite 350, Salt Lake City, Utah 84180-1203.

Sincerely,

Marjorie L. Anderson  
Administrative Assistant

mfp

Enclosure



This publication was sent to:

Newspaper Agency  
Legal Advertising  
Mezzanine Floor  
143 South Main  
Salt Lake City, Utah 84111

San Juan Record  
PO Box 879  
937 E. Highway 666  
Monticello, Utah 84535  
Legal Advertising

U.S. Environmental Protection Agency  
Suite 500 Region VIII  
Attn: Mike Strieby  
999 18th Street  
Denver, Colorado 80202-2405

Bureau of Land Management  
Consolidated Financial Center  
324 South State Street  
Salt Lake City, Utah 84111-2303

Utah State Department of Health  
Water Pollution Control  
Attn: Loren Morton  
288 N. 1480 W.  
PO Box 1669  
Salt Lake City, Utah 84116-0690

Utah Division of State Lands  
355 West North Temple  
3 Triad Center, Suite 400  
Salt Lake City, Utah 84180-1203

Bureau of Land Management  
Moab District Office  
U.S. Department of the Interior  
PO Box 970  
82 East Dogwood  
Moab, Utah 84532

Marathon Oil Company  
PO Box 120  
Casper, Wyoming 82602

Chorney Oil Company  
555 17th Street, Ste. 1000  
Denver, Colorado 80202

Donald B. Anderson  
Three Park Central, Ste. 1060  
Denver, Colorado 80202

Texaco, Inc.  
PO Box 2100  
Denver, Colorado 80201

BWAB 1984-1986 Joint Venture  
1801 California Ste. 1000  
Denver, Colorado 80202

Meridian Oil, Inc.  
5613 DTC Parkway  
Englewood, Colorado 80111

Navajo Area Office  
U.S. Bureau of Indian Affairs  
Attn: Area Realty Officer  
PO Box M  
Windowrock, Arizona 86515

Navajo Indian Tribe  
Minerals Department Building  
Windowrock, Arizona 84515

  
March 30, 1987

~~CONFIDENTIAL~~

051418

OPERATOR Mendian Oil Inc DATE 4-1-87

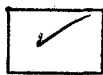
WELL NAME Narajo Fed 14-4

SEC SW SW 4 T 39S R 25E COUNTY San Juan

43-037-31321  
API NUMBER

Fed  
TYPE OF LEASE

CHECK OFF:



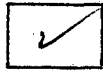
PLAT



BOND



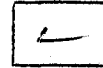
NEAREST  
WELL



LEASE



FIELD



POTASH OR  
OIL SHALE

PROCESSING COMMENTS:

Rescinded original APD (API # 43-037-31265)

Need water permit

APPROVAL LETTER:

SPACING: ☐ 203 \_\_\_\_\_ UNIT



302



\_\_\_\_\_  
CAUSE NO. & DATE



302.1

STIPULATIONS:

to water

BEFORE THE BOARD OF OIL, GAS AND MINING

DEPARTMENT OF NATURAL RESOURCES

STATE OF UTAH

IN THE MATTER OF THE PETITION )	
OF MERIDIAN OIL, INC. FOR )	AFFIDAVIT OF MAILING
APPROVAL OF A WATER FLOOD )	
SECONDARY RECOVERY PROJECT FOR )	
THE KIVA FIELD, SAN JUAN )	Docket No. 87-011
COUNTY, UTAH )	Cause No. 215-1
)	

STATE OF UTAH )  
 ) ss.  
COUNTY OF SALT LAKE )

The undersigned hereby certifies under oath that a copy of the Petition filed with the Utah Board of Oil, Gas and Mining by Meridian Oil, Inc. has been mailed, postage prepaid, as required by Rule 501(b)(a), to all operators, owners and surface owners within one-half ( $\frac{1}{2}$ ) mile of the proposed Kiva Field Water Flood Project, San Juan County, State of Utah, at the following listed mailing addresses:

Meridian Oil, Inc.  
5613 DTC Parkway  
Englewood, CO 80111

BWAB 1984-1986 Joint Venture  
1801 California, Ste. 1000  
Denver, CO 80202

Texaco, Inc.  
P.O. Box 2100  
Denver, CO 80201

Donald B. Anderson  
Three Park Central, Ste. 1060  
Denver, CO 80202

Chorney Oil Company  
555 17th Street, Ste. 1000  
Denver, CO 80202

Marathon Oil Company  
P.O. Box 120  
Casper, WY 82602

Bureau of Land Management  
(Moab District Office)  
U.S. Department of the Interior  
P.O. Box 970  
82 East Dogwood  
Moab, UT 84532

Navajo Indian Tribe  
Minerals Department Building  
Windowrock, AZ 86515

Navajo Area Office  
U.S. Bureau of Indian Affairs  
(Attn: Area Realty Officer)  
P.O. Box M  
Windowrock, AZ 86515

Utah Division of State Lands  
355 West North Temple, Ste. 400  
Salt Lake City, UT 84180-1204

DATED this 11th day of March, 1987.

MERIDIAN OIL, INC.

By: 

Robert G. Pruitt, Jr.  
Attorney for Meridian Oil, Inc.  
Pruitt, Gushee & Fletcher  
1850 Beneficial Life Tower  
Salt Lake City, UT 84111  
Telephone: (801) 531-8446

On this 11th day of March, 1986, personally appeared before me, Robert G. Pruitt, Jr., the signer of the above instrument, who being first duly sworn acknowledged to me that he executed the same.

My Commission Expires:

\_\_\_\_\_  
NOTARY PUBLIC  
Residing at: \_\_\_\_\_

LIST OF OPERATORS OR OWNERS AND SURFACE OWNERS  
WITHIN 1 MILE OF PROPOSED KIYA FIELD WATERFLOOD  
PROJECT, SAN JUAN COUNTY, UTAH (STATE REQ.# 501-b-8)

<u>LEASE NUMBER</u>	<u>LEASE DESCRIPTION</u>	<u>WORKING INTEREST OWNER</u>	<u>(%)</u>	<u>SURFACE OWNER</u>
<u>FEDERAL TRACTS</u>				
U-52333	T39S - R25E Sec. 4: ALL Sec. 9: ALL	Meridian Oil Inc. 5613 DTC Parkway Englewood, CO. 80111	75%	USA-BLM
		BWAB 1984-1986 Joint Venture 1801 California St., Ste. 1000 Denver, CO. 80202	25%	
U-58728	T39S - R25E Sec. 5: SE/4NE/4 E/2SE/4	Meridian Oil Inc.	75%	Navajo Indian Trib
		BWAB 1884-86 Joint Vent.	25%	
U-57895	T39S - R25E Sec. 5: NE/4NE/4 W/2E/2 W/2	Meridian Oil Inc.	75%	Navajo Indian Trib
U-12424	T39S - 25E Sec. 3: ALL	Texaco Inc. P.O. Box 2100 Denver, CO. 80201	50%	USA-BLM
		Donald B. Anderson Three Park Central Suite 1060 Denver, CO. 80202	25%	
		Chorney Oil Company 555 - 17th Street Suite 1000 Denver, CO. 80202	25%	
U-12426	T39S - 25E Sec. 10: ALL	Texaco Inc. P.O. Box 2100 Denver, CO. 80201	50%	USA-BLM
		Joan Chorney c/o Chorney Oil Co. 555 - 17th Street Suite 1000 Denver, CO. 80202	25%	
		Donald B. Anderson Three Park Central Suite 1060 Denver, CO. 80202	25%	
<u>UTAH STATE TRACT</u>				
ML-40303	T38S - R25E Sec. 32: ALL	Marathon Oil Company P.O. BOX 120 Casper, WY. 82402	100%	State of Utah

# AFFIDAVIT OF PUBLICATION

## Public notice

BEFORE THE DIVISION OF OIL, GAS  
AND MINING, DEPARTMENT OF  
NATURAL RESOURCES, STATE OF  
UTAH

IN THE MATTER OF THE APPLICA-  
TION OF MERIDIAN OIL INC. FOR  
ADMINISTRATIVE APPROVAL FOR  
CLASS II INJECTION WELLS LOCA-  
TED IN SECTIONS 4, 5, & 9, TOWN-  
SHIP 39 SOUTH, RANGE 25 EAST,  
S.L.M., SAN JUAN COUNTY, UTAH.

\*\*\*

CAUSE NO. UIC-094

THE STATE OF UTAH TO ALL  
INTERESTED PARTIES IN THE  
ABOVE ENTITLED MATTER.

Notice is hereby given that Meridian  
Oil Inc., has requested administrative  
approval from the Division to convert  
the following wells to enhanced recovery  
water injection wells:

KIVA FIELD  
San Juan County, Utah  
Navajo-Federal #14-4  
Navajo-Federal #43-5  
Navajo-Federal #21-9

INJECTION INTERVAL: Paradox For-  
mation 5450'-5650'. MAXIMUM SUR-  
FACE PRESSURE: 3740 psig. MAXI-  
MUM WATER INJECTION RATE:  
5000 BWPD.

Conditional approval of this applica-  
tion will be granted, by the Division  
subject to project approval by the Board  
of Oil, Gas and Mining, unless objections  
are filed with the Division of Oil, Gas and  
Mining within fifteen days after publica-  
tion of this Notice. Objections, if any,  
should be mailed to the Division of Oil,  
Gas and Mining, Attention: UIC  
Program Manager, 3 Triad Center, Suite  
350, 355 West North Temple, Salt Lake  
City, Utah 84180-1203.

DATED this 23rd day of March, 1987.

STATE OF UTAH  
DIVISION OF OIL, GAS AND MINING  
MARJORIE L. ANDERSON

Administrative Assistant

Published in The San Juan Record  
April 8, 1987.

I, Joyce Martin, being duly sworn, depose and say that I am the publisher of **The San  
Juan Record**, a weekly newspaper of general circulation published at Monticello,  
Utah every Wednesday; that notice of application for adminis-  
trative approval, Cause No. UIC-094

a copy of which is hereunto attached, was published in the regular and entire issue  
of each number of said newspaper for a period of one issues, the  
first publication having been made on April 8, 1987. ~~and the~~  
last publication having been made on \_\_\_\_\_.

Joyce A. Martin  
Publisher

Subscribed and sworn to before me this 8th day of April

A.D. 1987

Ingrid K. Adams  
Notary Public residing at Monticello, Utah

My commission expires December 2, 1987



116 State Capitol Building  
Salt Lake City, UT 84114  
Telephone 801-533-5245

## office of planning and budget

Norman H. Bangerter, Governor Dale C. Hatch, C.P.A., J.D., Director Michael E. Christensen, Ph.D., Deputy Director

**RECEIVED**  
APR 15 1987

**DIVISION OF  
OIL, GAS & MINING**

April 14, 1987

Gil Hunt  
Division of Oil, Gas and Mining  
3 Triad Center, Suite 350  
355 West North Temple  
Salt Lake City, Utah 84180-1203

SUBJECT: Kiva Field Enhanced Recovery Project  
State Application Identifier #UT870401-010

Dear Gil:

The Resource Development Coordinating Committee of the State of Utah has reviewed this proposed action and no comments have been indicated.

Thank you for the opportunity of reviewing this document. Please address any other questions regarding this correspondence to Carolyn Wright (801) 533-4971.

Sincerely,

*Michael E. Christensen*

Michael E. Christensen  
Deputy Director

MEC/jw

143 SOUTH MAIN ST.  
P.O. BOX 45838  
SALT LAKE CITY, UTAH 84145  
FED. TAX I.D. # 87-0217663

# Newspaper Agency Corporation

The Salt Lake Tribune

DESERET NEWS

MORNING & SUNDAY

EVENING & SUNDAY

## Affidavit of Publication

STATE OF UTAH. }  
County of Salt Lake }

I, Raylene Vigil Hereby certify that the attached advertisement of CAUSE NO. UIC-094 for STATE OF UTAH DIV. OF OIL, GAS, & MINING was published by the NEWSPAPER AGENCY CORPORATION, AGENT FOR THE SALT LAKE TRIBUNE and DESERET NEWS, daily newspapers printed in the English language with general circulation in Utah, and published in Salt Lake City, Salt Lake County in the State of Utah.

PUBLISHED ON APR 5, 1987

SUBSCRIBED AND SWORN TO BEFORE ME THIS 10th DAY OF APRIL 19 87

[Signature]  
NOTARY PUBLIC

OCTOBER 1, 1990  
COMMISSION EXPIRES

CAUSE NO. UIC-094  
BEFORE THE DIVISION OF OIL,  
GAS AND MINING  
DEPARTMENT OF NATURAL  
RESOURCES  
STATE OF UTAH  
IN THE MATTER OF THE AP-  
PLICATION OF MERIDIAN OIL  
INC. FOR ADMINISTRATIVE  
APPROVAL FOR CLASS II IN-  
JECTION WELLS LOCATED IN  
SECTIONS 4, 5, & 9, TOWNSHIP  
39 SOUTH, RANGE 25 EAST,  
S.L.M., SAN JUAN COUNTY,  
UTAH.

THE STATE OF UTAH TO  
ALL INTERESTED PARTIES IN  
THE ABOVE ENTITLED MAT-  
TER.

Notice is hereby given that  
Meridian Oil Inc., has requested  
administrative approval from  
the Division to convert the fol-  
lowing wells to enhanced re-  
covery water injection wells:

KIVA FIELD

San Juan County, Utah

Navajo-Federal #14-4

Navajo-Federal #43-5

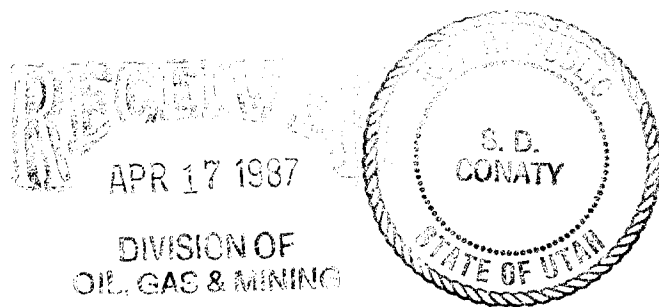
Navajo-Federal #21-9

INJECTION INTERVAL: Para-  
dox Formation 5450'-5650'  
MAXIMUM SURFACE PRES-  
SURE: 3740 psig  
MAXIMUM WATER INJE-  
CTION RATE: 5000 BWPD

Conditional approval of this  
application will be granted, by  
the Division subject to project  
approval by the Board of Oil,  
Gas and Mining, unless objec-  
tions are filed with the Division  
of Oil, Gas and Mining within fif-  
teen days after publication of  
this Notice. Objections, if any,  
should be mailed to the Division  
of Oil, Gas and Mining, Atten-  
tion: UIC Program Manager, 3  
Triad Center, Suite 350, 355  
West North Temple, Salt Lake  
City, Utah 84180-1203.  
DATED this 23th day of  
March, 1987.

STATE OF UTAH  
BOARD OF OIL, GAS  
AND MINING  
Marjorie L. Anderson  
Administrative Assistant

U-34



### LEGAL ADVERTISING INVOICE

ACCOUNT NAME		AD NUMBER	TELEPHONE	
UTAH, DIV. OF OIL, GAS, & MINING		U-34	538-5340	
SCHEDULE			MISC. CHARGES	
C APR 5, 1987				
ON	SIZE	TIMES	RATE	AD CHARGE
UIC-094	66 AGATE LINES	1	1.22	80.52

DUE AND PAYABLE ON RECEIPT OF THIS INVOICE  
FOR BILLING INFORMATION CALL 801-237-2796

**TOTAL AMOUNT DUE** 80.52

TO INSURE PROPER CREDIT

## PLEASE RETURN THIS PORTION

WITH YOUR PAYMENT IN THE ENCLOSED ENVELOPE  
MAKE CHECKS PAYABLE TO:

NEWSPAPER AGENCY CORPORATION

(PLEASE WRITE YOUR ACCOUNT  
NUMBER ON YOUR CHECK)

BILL TO:

STATE OF UTAH  
DIVISION OF OIL, GAS, & MINING  
355 WEST NORTH TEMPLE  
3 TRIAD CENTER, SUITE 350  
SALT LAKE CITY, UT 84180-1203

ACCOUNT NUMBER	BILLING DATE
538-5340	4/10/87
AD NUMBER	PAY THIS AMOUNT
U-34	89052



BWAB INCORPORATED



April 16, 1987

State of Utah  
Department of Natural Resources  
Board of Oil, Gas and Mining  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
Attn: Mr. Gil Hunt

RE: Petition by Meridian Oil Inc. for approval  
of a Water Flood Secondary Recovery Project  
in the Kiva Field, San Juan County, Utah  
Docket No. 87-001  
Cause No. 215-1

Gentlemen:

BWAB Incorporated owns an undivided 25% leasehold interest under the lands included within the proposed Kiva Field Unit. Our 25% interest represents the balance of the Unit Working Interest not owned by the appointed Operator, Meridian Oil Inc.

This letter has been written to advise you that BWAB Incorporated has been involved in the formulation and preparation of the Unit Plan of Depletion ("Geological and Engineering Report") which has been submitted to you for approval.

We have reviewed the Geological and Engineering Report from the various technical perspectives and are in full agreement with the Plan of Depletion in its present form. We also concur with the percentages of Unit Ownership set forth on Figure 24 of the Geological and Engineering Report dated April 7, 1987.

Please advise if for any reason the Board feels BWAB's presence at the April 23, 1987 hearing is necessary. Otherwise, please accept this letter as written confirmation of our acceptance of, and agreement with the Plan of Depletion for the Kiva Field Unit.

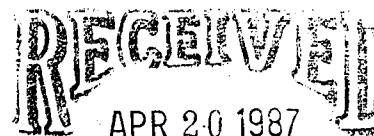
Sincerely,

BWAB INCORPORATED

Carter G. Mathies  
Manager - Special Projects

CGM/mks

cc: Jim Fraser (MOI Billings)



DIVISION OF  
OIL, GAS & MINING

106 Case J807  
Survey References

Harden, Patrick

1985a "An Archaeological Survey of Western Geophysical Company's '3D' Project Located in Southeastern San Juan County, Utah". La Plata Archaeological Consultants. (U-84-30-355sp.)

1985b "Archaeological Survey of Black Steer to Cross Canyon Gas Pipeline for Koch Hydrocarbon Company, San Juan County, Utah." La Plata Archaeological Consultants. (U-85-30-549bsp.)

Hibbets, Barry

1984 "An Archaeological Survey of Petty-Ray Geophysical's Seismograph Lines Nos. BUL-4, MON-2, NMC-4, PAT-5 in Western Montezuma County, Colorado and Eastern San Juan County, Utah." La Plata Archaeological Consultants. (U-84-30-158bs.)

Hibbets, Barry

1986 "An Archaeological Survey of Meridian Petroleum's 44-4 Navajo Federal Well Site and Access Road, San Juan County, Utah." La Plata Archaeological Consultants. (U-86-LA-083b.)

BEFORE THE BOARD OF OIL, GAS & MINING  
DEPARTMENT OF NATURAL RESOURCES  
IN AND FOR THE STATE OF UTAH

IN THE MATTER OF THE AMENDED )	
PETITION OF MERIDIAN OIL, INC.)	FINDINGS OF FACT,
FOR AN ORDER ESTABLISHING A )	CONCLUSIONS OF LAW
SECONDARY RECOVERY UNIT IN )	AND ORDER
THE UPPER ISMAY ZONE OF THE )	
PARADOX FORMATION FOR LANDS )	Docket No. 87-011
IN THE KIVA FIELD OF SAN )	Cause No. 215-1
JUAN COUNTY, UTAH )	
)	

Pursuant to Notice of Hearing dated March 30, 1987, this matter and cause came on for hearing before the Utah Board of Oil, Gas and Mining on Thursday, April 23, 1987 at 10:00 a.m. in the Board Room of the Division of Oil, Gas and Mining, 355 West North Temple, 3 Triad Center, Suite 301, Salt Lake City, Utah.

The following members of the Board were present and participated in the hearing:

Gregory P. Williams, Chairman  
Judy F. Lever  
Charles R. Henderson  
Richard B. Larsen  
John M. Garr

Also present at the hearing and participating were the following members of the staff of the Utah Division of Oil, Gas and Mining: Dr. Dianne R. Nielson, Director; Ronald J. Firth, Associate Director of Oil & Gas; John R. Baza, Petroleum Engineer; and Barbara W. Roberts, Division Counsel.

Present and participating for the Bureau of Land Management were: Howard Lemm, Chief, Branch of Fluid Minerals; Assad Raffoul, Petroleum Engineer, Utah State Office; Steve Jones, Petroleum Engineer, Moab District Office; and Jerry Kenczka, Petroleum Engineer, Vernal District Office.

The Petitioner, Meridian Oil, Inc. was represented by its employees L.L. Parish, Land Manager; Daniel A. Sodersten, Petroleum Engineer; and Cindy L. Crawley, Senior Staff Geologist, who testified at the hearing. Also present at the hearing were employees David S. Dale, Attorney; and James B. Fraser, Regional Reservoir Engineer. Legal representation was by Robert G. Pruitt, Jr. of Pruitt, Gushee & Fletcher, attorneys in Salt Lake City.

A written communication in support of the Amended Petition was received from BWAB Incorporated, of Denver, Colorado. No communications or statements were made in opposition to the Amended Petition.

NOW THEREFORE, the Board having heard and considered the testimony, evidence and statement presented at the hearing, and now being fully advised in the premises, makes and enters the following:

#### FINDINGS OF FACT AND CONCLUSIONS OF LAW

1. Due and regular notice of the time, place and purpose of the hearing has been given to all interested parties as required by law and by the rules and regulations of the Board.

2. The Board has jurisdiction over the matters covered by said Notice and over all parties interested therein, and has jurisdiction to make and promulgate the Order hereinafter set forth.

3. Sections 40-6-7 and 40-6-8, Utah Code Anno. 1953 (as amended in 1983), confer upon this Board the power and authority to hear and approve a plan and agreement for the operation of a secondary recovery unit upon lands within the State of Utah which, when approved within six (6) months after the Board's Order by the owners who will be required to pay 70% of the costs of such unit operation and the owners of 70% of the production or proceeds therefrom (including royalty and overriding royalty), will become binding upon all owners within said unit who are subject to the jurisdiction of the State of Utah.

4. The lands within the Kiva Field and the proposed Kiva Secondary Recovery Unit according to the federal Kiva (Upper Ismay) Unit Area Agreement submitted to the Utah State Office, Bureau of Land Management for approval are described as:

#### Township 39 South, Range 25 East, SLM

Section 4: SE $\frac{1}{4}$ SE $\frac{1}{4}$ , W $\frac{1}{2}$ SE $\frac{1}{4}$ , SW $\frac{1}{4}$ , S $\frac{1}{2}$ NW $\frac{1}{4}$ , NW $\frac{1}{4}$ NW $\frac{1}{4}$   
Section 5: E $\frac{1}{2}$   
Section 8: NE $\frac{1}{4}$ NE $\frac{1}{4}$   
Section 9: N $\frac{1}{2}$

(comprising 1,080.16 acres in San Juan County, Utah)

The above lands are underlain by the Upper Ismay Zone of the Paradox Formation, in an oil reservoir formed by an algal mound which contains oil and gas accumulations susceptible to enhanced recovery by water flood methods in the manner proposed by

Petitioner in its Geological and Engineering Report, introduced at the hearing as Exhibit "A". Allocation of production will be based upon reservoir pore volume assigned to each tract within the unit.

5. The Board finds that the proposed plan is in the public interest, and will promote conservation, increase ultimate recovery, prevent waste of oil or gas, and protect the correlative rights of each owner or producer. The Board further finds that the operation of the proposed secondary recovery unit is reasonably necessary for the recovery of additional oil, and that the value of the estimated additional recovery substantially exceeds the estimated additional costs incident to conducting such operations.

6. The proposed Unit Agreement and Unit Operating Agreement, introduced at the hearing as Exhibits "B" and "C", with appropriate exhibits attached thereto, has been prepared in accordance with requirements of the U.S. Bureau of Land Management, and is acceptable to the Utah Division of Oil, Gas & Mining as submitted.

7. Petitioner has requested, and the Board concurs, that this Order should conform exactly with the area approved by the Bureau of Land Management for the Kiva Secondary Recovery Unit. The Amended Petition covers exactly the same lands as the proposed federal unit area, which BLM advises it will approve. However, future drilling of proposed water injection wells and possible future producing wells may alter the limits of the Kiva Field, necessitating deletion of certain marginal lands presently included in the proposed plan and the proposed federal unit area. Since no pore volume has been assigned to said marginal lands, their deletion will not affect correlative rights under the proposed plan.

#### ORDER

It is therefore ordered by the Board as follows:

1. The lands described in Section 4 hereof constitute a pool for the operation of a water flood secondary recovery unit in the Upper Ismay Zone of the Paradox formation, and this Board hereby establishes the same as a pool to be operated as a unit for the continued operation of all wells thereon.

2. The plan of operation set forth in the Geological and Engineering Report, Exhibit "A", is hereby approved for the purposes stated therein. In the event that secondary recovery operations are abandoned, the pool may continue to be operated on a unit basis as a primary depletion project.

3. The federal Unit Agreement and the federal Unit Operating Agreement, Exhibits "B" and "C", with appropriate attachments thereto, are hereby approved by the Board.

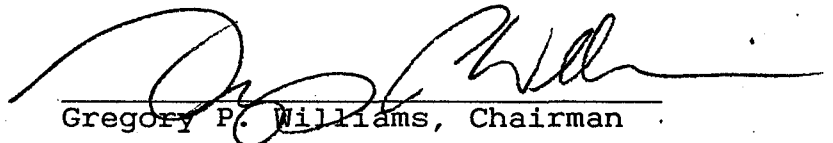
4. When the owners who are required to pay 70% of the costs of unit operation, and the owners of 70% of the production or proceeds from such unit operation that will be credited to interests which are free of cost (including royalty and overriding royalty) approve the said federal Agreements in writing, the provisions thereof shall be binding upon all parties in the manner authorized by Sections 40-6-7 and 40-6-8, Utah Code Ann. 1953 (as amended in 1983). Written approval by the U.S. Bureau of Land Management will be required to make the unit effective. All written approvals must be obtained within six (6) months from the date of this Order, or this Order shall become ineffective and shall be revoked by the Board unless, for good cause shown, the Board extends the time.

5. This Order does not waive jurisdiction nor the necessity for Petitioner to comply with all requirements and procedures of the Underground Injection Control (UIC) Program with respect to the injection wells in said unit.

6. This Board retains continuing jurisdiction over the subject matter and the parties, for the purpose of considering any amendments or revisions to the operating plans, the Agreements governing unit operations, and the lands covered within said unit.

Entered this 23rd day of April, 1987.

STATE OF UTAH  
BOARD OF OIL, GAS AND MINING



Gregory P. Williams, Chairman

R 25 E

+U-57896

+U-52333

**Proposed Waterflood Unit Boundary**

+U-58728

C  
Hathaway

MOI  
42-5

MOI  
43-5 Δ

MOI  
4-4

MOI  
Δ 14-4

MOI  
23-4

MOI  
4-1

MOI  
4-2

MOI  
Δ 21-9

MOI  
9-1

C'  
MOI  
9-2

MOI  
42-9

T  
39  
S

**MERIDIAN OIL**

**KIVA FIELD**  
**SAN JUAN COUNTY, UTAH**

LINE OF GEOLOGIC CROSS-SECTION

+U-XXXXX FEDERAL LEASE UNIT NUMBER

----- FEDERAL ACREAGE CONTAINED  
IN PROPOSED UNIT

# Commencement

MONTHLY REPORT OF ENHANCED RECOVERY PROJECT - PART 2

## A M E N D E D     R E P O R T

## MONTHLY MONITORING OF INJECTION WELLS

<u>Well Name</u>	<u>Average Inj. Press.</u>	<u>Average Inj. Rate</u>	<u>Annulus Press.</u>	<u>Monthly Inj. Vol.</u>
4-2 Navajo-Fed (GIW)	1399	2234 MCFPD	0	69,265
14-4 Navajo-Fed (WIW)	2858	737 BWPD	0	6,633
21-9 Navajo-Fed (WIW)	2599	860 BWPD	0	7,741
Note: 1st water injection: 7/22/87			SEP 28 1987	



RECEIVED  
APR 28 1987

April 21, 1987

DIVISION OF  
OIL, GAS & MINING



NORMAN H. BANGERTER  
GOVERNOR

DC  
EIS

STATE OF UTAH  
DEPARTMENT OF COMMUNITY AND  
ECONOMIC DEVELOPMENT

Chairperson  
Resource Development Coordinating Committee  
State Planning Office  
118 State Capitol  
Salt Lake City, Utah 84114

Division of  
State History  
(UTAH STATE HISTORICAL SOCIETY)

MAX J. EVANS, DIRECTOR  
300 RIO GRANDE  
SALT LAKE CITY, UTAH 84101-1182  
TELEPHONE 801/533-5755

RE: Kiva Field Enhanced Recovery Project

In Reply Please Refer to Case No. J801

Dear Chairperson:

The staff of the Utah State Historic Preservation Office has reviewed the above referenced state action. From telephone conversations with Mr. Gil Hunt of DOGM, we understand that there will be additional drilling in conjunction with this project. Our records indicate that several surveys for historic and cultural resources have been conducted near or in the area to be affected by this project. The survey information is listed below (the quarter/quarter sections were provided by Mr. Hunt during a telephone conversation of 17 April with Charles Shepherd of the Preservation Office).

Section 4, SW1/4 of the SW1/4, surveys are 84-30-355 and 86-EA-083

Section 5, NE1/4 of the SE1/4, survey is 84-30-355

Section 9, NE1/4 of the NW 1/4, surveys are 84-30-355, 85-36-549, and 84-30-158

We have also attached a list of four surveys performed, again, near or in the area of this proposed project. Our records indicate that we know of no sites listed on or eligible for the National Register located within the boundaries of this proposed project.

The above is provided on request for assistance as outlined by 36 CFR 800 or Utah Code, Title 63-18-37. If you have questions or need additional assistance, please contact Charles Shepherd at (801) 533-7039.

Sincerely,

Max J. Evans  
Director and  
State Historic Preservation Officer

CMS:jrc:J801/4039V

xc: Gil Hunt, UIC Manager, Division of Oil, Gas & Mining, 3 Triad Center,  
Suite 350, Salt Lake City, Utah 84180-1203

Enclosures

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/>			5. LEASE DESIGNATION AND SERIAL NO. U-52333	
b. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input checked="" type="checkbox"/> Injection SINGLE ZONE <input type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>			6. IF INDIAN, ALLOTTEE OR TRIBE NAME N/A	
2. NAME OF OPERATOR MERIDIAN OIL INC.			7. UNIT AGREEMENT NAME N/A	
3. ADDRESS OF OPERATOR P. O. Box 1855, Billings, MT 59103			8. FARM OR LEASE NAME Navajo-Federal	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)* At surface SWSW (1150' FSL - 1110' FWL) At proposed prod. zone Same			9. WELL NO. 14-4	
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* 6 miles east Hatch Trading Post			10. FIELD AND POOL, OR WILDCAT Kiva	
15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drig. unit line, if any) 1110'			11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Section 4-39S-25E	
16. NO. OF ACRES IN LEASE 2920.8			12. COUNTY OR PARISH San Juan	
17. NO. OF ACRES ASSIGNED TO THIS WELL 40			13. STATE Utah	
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. 900'			20. ROTARY OR CABLE TOOLS Rotary	
19. PROPOSED DEPTH 5765'			22. APPROX. DATE WORK WILL START* April, 1987	
21. ELEVATIONS (Show whether DF, RT, GR, etc.) 4867' GL (graded)				

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DIVISION OF  
OIL, GAS & MINING

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED <u>B. C. Imhoff</u> TITLE <u>Sr. Drilling Engineer</u> DATE <u>3/24/87</u>	
(This space for Federal or State office use)	
PERMIT NO. <u>43-037-31205</u>	APPROVAL DATE <u>APR 30 1987</u>
APPROVED BY <u>Kenneth V. Rhea</u>	TITLE <u>Acting DISTRICT MANAGER</u>
CONDITIONS OF APPROVAL, IF ANY:	

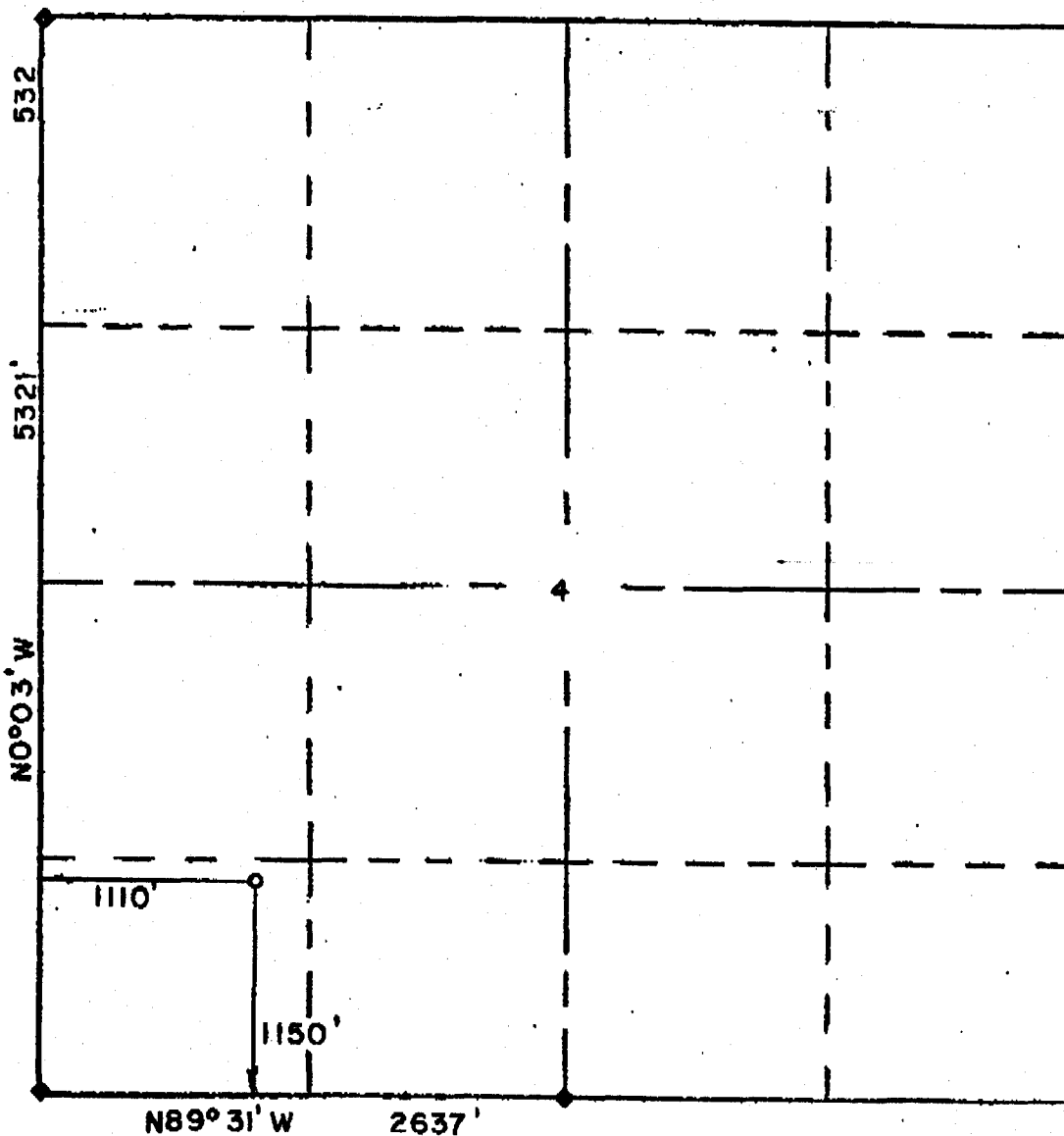
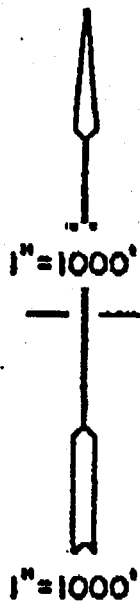
FLARING OR VENTING OF  
GAS IS SUBJECT TO NTL 4-A  
DATED 1/1/80

CONDITIONS OF APPROVAL ATTACHED

\*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

# WELL LOCATION PLAT



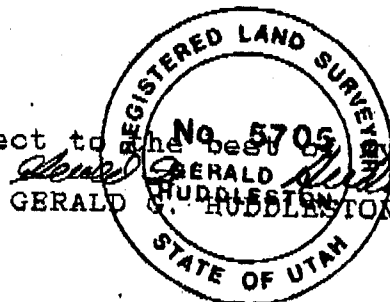
## WELL LOCATION DESCRIPTION:

MERIDIAN OIL  
 14-4 Navajo-Federal  
 1150' FS & 1110' FW  
 Section 4, T.39 S., R.25 E., SLM  
 San Juan County, Utah  
 4868' ground elevation  
 Alternate: 790' FS & 510' FW, 4788' grd.

**RECEIVED**  
 MAY 04 1987

DIVISION OF  
 OIL, GAS & MINING

The above is true and correct to the best of my knowledge.  
 revised  
 Feb. 17, 1987



Meridian Oil Inc.  
Well No. Navajo-Federal 14-4  
Sec. 4, T. 39 S., R. 25 E.  
San Juan County, Utah  
Lease U-52333

CONDITIONS OF APPROVAL

Approval of this application does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Meridian Oil Inc., is the bonded entity on this application. Liability will remain with the bonded party named above until we are formally notified by letter of the new bonded entity in reference to this Application for Permit to Drill.

A. DRILLING PROGRAM

1. B.O.P.E. will be tested to 1500 psi before drilling out from 9-5/8" csg shoe.

**RECEIVED**  
MAY 04 1987

DIVISION OF  
OIL, GAS & MINING

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK

DRILL ☒

DEEPEN ☐

PLUG BACK ☐

b. TYPE OF WELL

OIL  
WELL ☐

GAS  
WELL ☐

OTHER Injection

SINGLE  
ZONE ☐

MULTIPLE  
ZONE ☐

2. NAME OF OPERATOR

MERIDIAN OIL INC.

3. ADDRESS OF OPERATOR

P. O. Box 1855, Billings, MT 59103

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)\*

At surface

SWSW (1150' FSL - 1110' FWL)

At proposed prod. zone

Same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*

6 miles east Hatch Trading Post

15. DISTANCE FROM PROPOSED\*

LOCATION TO NEAREST  
PROPERTY OR LEASE LINE, FT.  
(Also to nearest drlg. unit line, if any)

1110'

16. NO. OF ACRES IN LEASE

2920.8

17. NO. OF ACRES ASSIGNED  
TO THIS WELL

40

18. DISTANCE FROM PROPOSED LOCATION\*  
TO NEAREST WELL, DRILLING, COMPLETED,  
OR APPLIED FOR, ON THIS LEASE, FT.

900'

19. PROPOSED DEPTH

5765'

20. ROTARY OR CABLE TOOLS

Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)

4867' GL (graded)

22. APPROX. DATE WORK WILL START\*

April, 1987

5. LEASE DESIGNATION AND SERIAL NO.

U-52333

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

N/A

7. UNIT AGREEMENT NAME

N/A

8. FARM OR LEASE NAME

Navajo-Federal

9. WELL NO.

14-4

10. FIELD AND POOL, OR WILDCAT

Kiva

11. SEC. T. R., M., OR BLK.  
AND SURVEY OR AREA

Section 4-39S-25E

12. COUNTY OR PARISH

San Juan

13. STATE

Utah

RECEIVED  
MAY 04 1987

DIVISION OF  
OIL, GAS & MINING

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

23.

SIGNED

*B. C. Smith*

TITLE

Sr. Drilling Engineer

DATE

3/24/87

(This space for Federal or State office use)

PERMIT NO.

43-037-31265  
Kenneth V. Rhea

APPROVAL DATE

APR 30 1987

APPROVED BY

TITLE

Acting DISTRICT MANAGER

DATE

CONDITIONS OF APPROVAL, IF ANY:

FLARING OR VENTING OF  
GAS IS SUBJECT TO MTL 4-A  
DATED 1/1/80

CONDITIONS OF APPROVAL ATTACHED

\*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

NW

C

**HATHAWAY**  
**GLASCO FEDERAL 1**  
 2037 FNL 2037 FEL  
 5-T39S-25E



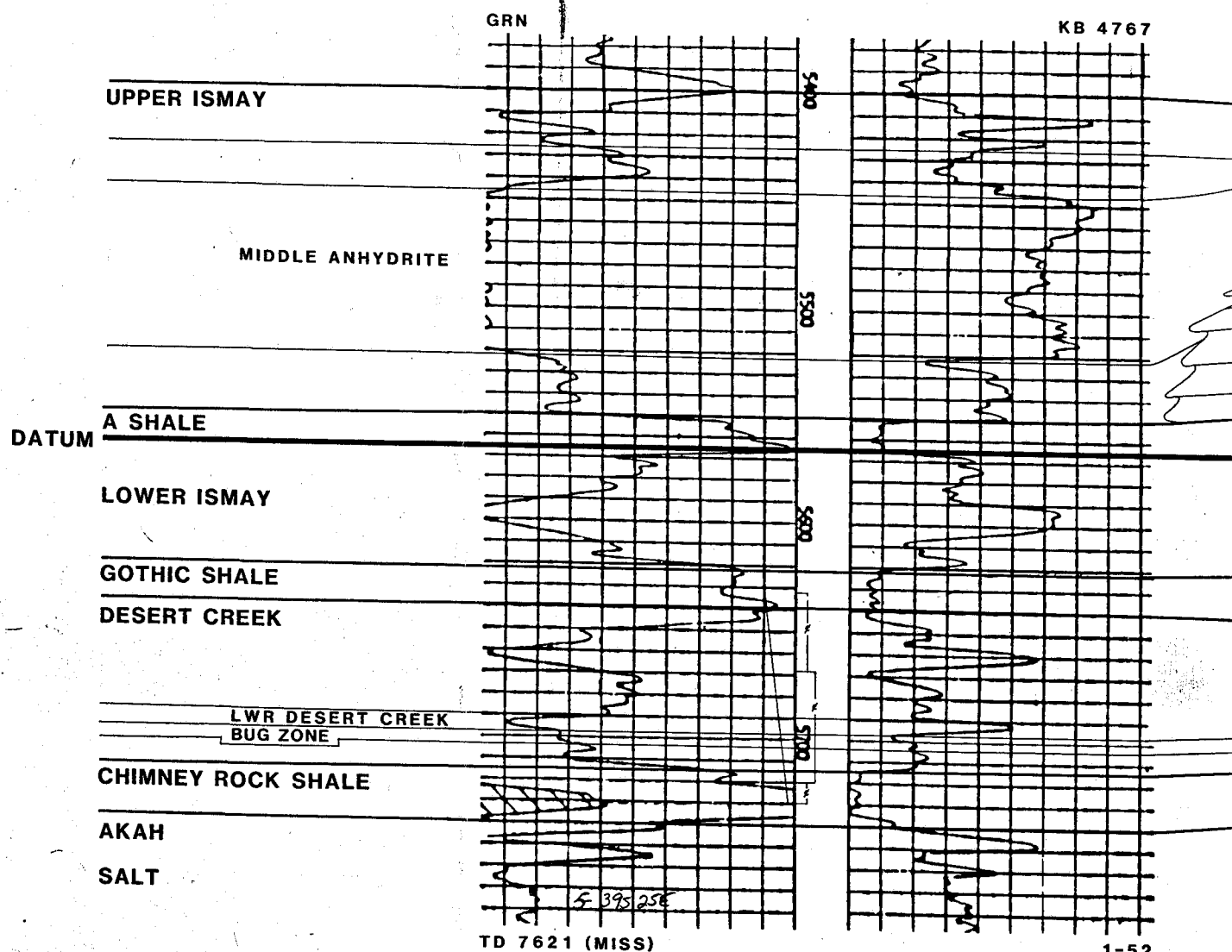
180°

**MERIDIAN OIL INC.**  
**NAVAJO FEDERAL 42-**  
 2130 FNL 320 FEL  
 5-T39S-R25E



UPPER ISMAY

IP 220 BOPD + 308 MCFG  
 36/64" ETP 100 psi  
 LDT-CNL



TD 7621 (MISS)

1-52

DST 5630-5730'  
 REC 45' GCM  
 SIP: 150  
 OP 1-1/2 HRS WK BLO-STDY BLO 10 MIN DIED

CORE 5635-5667 (REC. 27')  
 22' BLK CALC CARB SH; 3" ANHY; 10' HRD DNS; GY-BRN DOLO  
 W/ALTERNATING LS W/GOOD GAS ODOR AT TOP. OIL STN 5658'.

CORE 5667-5714' (REC. 47')  
 3-1/2' ANHY; 8-1/2' DOLO; LS 1ST 6' GOOD ODOR, 2' AN, 1" BK DNS  
 CALC CARB SH; WH/GY AN; 14' BRN DNS DOLO; LS GOOD ODOR THRU  
 OUT OIL STNS 5710'

CORE 5714-5730'  
 6' BRN DNS DOLO; LS; SLI ODOR 11' BLK CARR; CALC SH

TD 5782

PERF 5471-5544 (GROSS) UPPER I

CORE 1 5475-5535,  
 10' LM & DOL LT BRN-LT GY  
 INCR VUG POROSITY. ANHY B  
 OIL STN, BRI YEL FLOR BRI  
 MILKY CUT. 2' TITLE LM NO  
 LT BRN-LT GY CRPXL-MICROX  
 2' LM POOR INTERXL POR, N  
 LM-DOL CRPXL-MICXL, ABN F  
 STN, BRT YEL FLOR, MOD ST  
 POR, POOR INTERXL POR SOM

CORE 2 5535-5565'  
 14' LM-DOL, LT GY MICRXL-  
 INTXL POR GD VUG POR, V F  
 BRACHS 16' SH, DK GY, BLK  
 TR MICA, ETHY, HRD.

# MILESTONE

VAJO FEDERAL 4-4

1980 FSL 660 FWL

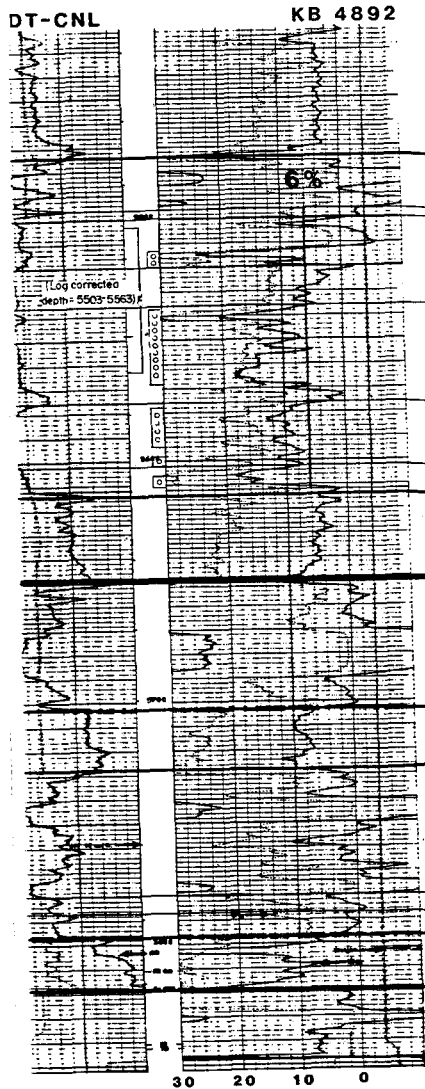
4-T39S-R25E



UPPER ISMAY

1 1142 BOPD • 799 MCF/GPD

3 4" FTP 325 psi



TD 5845

8-85

PERF 5513-5612 (Gross) UPPER ISMAY

CORE 5510-70'  
REC 9' TITE LM, 16' VUG & DOL,  
10' ALGAL MOUND LM, 5' DOLO. LM,  
20' BREC. LM, DOL ALGAL MOUND,  
EXCELLENT POROSITY, PERM, GOOD  
ODOR, STAIN, WEEPING OIL

PXL-MICXL,  
S. LT BRN  
L-GRN STRM  
OW, 3' LS,  
CRINOIDS,  
FC 40'  
IL GOOD OIL  
CUT, GD VUG  
ANY BLEBS.

L. P-F  
CRIN &  
ALC, CARB.

# MERIDIAN OIL INC.

NAVAJO FEDERAL 23-4

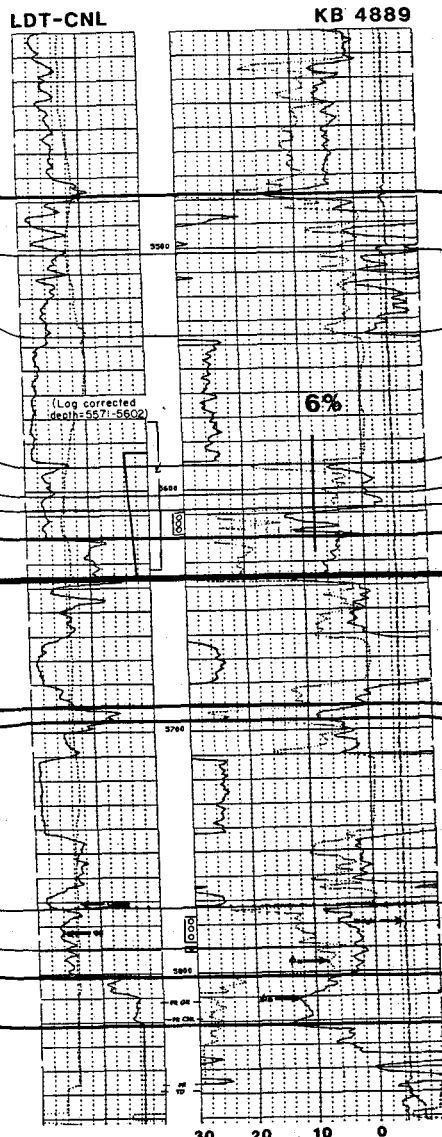
1500 FSL 2500 FWL

4-T39S-R25E



UPPER ISMAY

IP 43 BOPD • 60 MCF/GPD



TD 5860

6-85

PERF 5609-5618 (Gross) UPPER ISMAY

PERF 5776-5791 DESERT CREEK NO RECOVERY

DST 1 5584-5634  
REC. WTR CUSHION 550' + 1 BBL  
HGC&WCM  
SPL: 2000CC OIL 1450CC MUD .655 CFG  
FP: 230 230  
SIP: 1737 1671  
HP: 3309

DST 2 5731-5860  
REC. 367' WTR CUSHION + 1' OIL  
SPL: 2400CC MUD + .035 CFG  
FP: 89 89  
SIP: 268 409  
HP: 3205 3196

CORE 5574-5634  
17' ANHY, 9' LM, ARG, DNS, 12'  
LM, LTGY-WH, MICRO-FXL, RARE PP  
VUG 0, GD STN, FLU, CUT, 4' DOL,  
LT-MGY, TAN, FXL-FGRAN, HARD,  
FAIR 0 WITH MINOR PP VUG 0, GD  
CUT FLU & STN, 2' LM, TITE, 2'  
DOL, MBRN, MOTTLED GREY, MICROXL,  
VFXL, MICROSUCROSIC, MINOR VUGS,  
4' LM, VFXL, 11' BLK, POKER CHIP  
SHALE, PYR.

# KIVA FIELD

## MILESTONE

NAVAJO FEDERAL 4-1

370 FSL 1940 FWL

4-T39S-R25E



← 1100' →

## MILESTONE

NAVAJO FEDERAL 4-2

300 FSL 2225 FEL

4-T39S-R25E



← 1050' →

## MILESTONE

NAVAJO FEDERAL 9-1

770 FNL 2010 FEL

9-T39S-R25E



← 1400' →

UPPER ISMAY

IP 1056 BOPD - 750 MCFGPD

DESERT CREEK

FARO 980 BOPD - 2500 MCFGPD

UPPER ISMAY

IP 961 BOPD - 1890 MCFGPD

UPPER ISMAY

IP 475 BOPD - 600 MCFGPD

32/64" FTP 100 psi

LDT-CNL

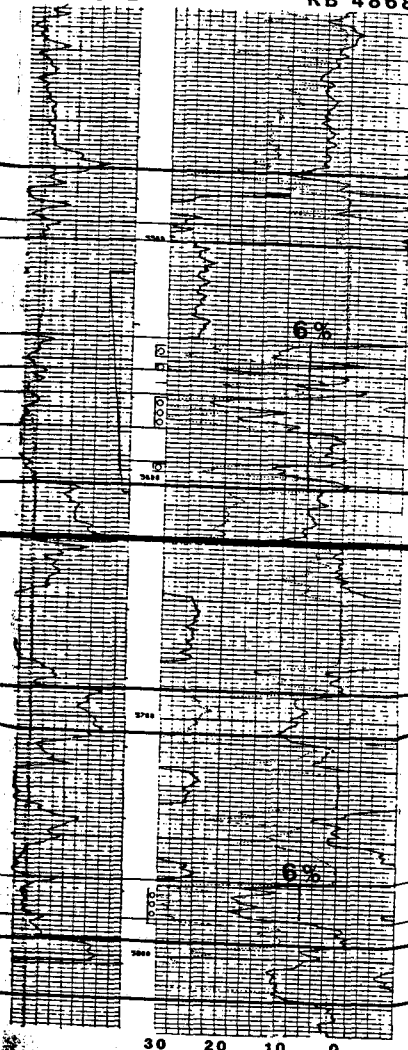
KB 4868

LDT-CNL

KB 4873

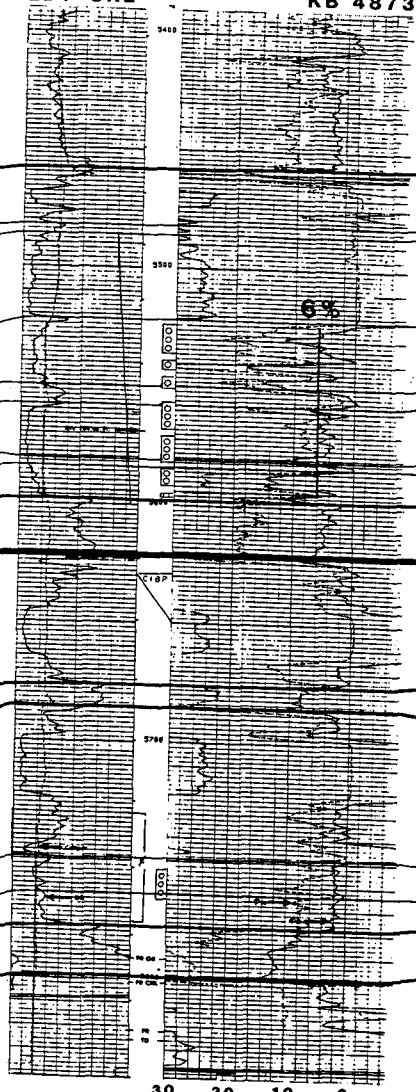
FDC-CNL

KB 4851



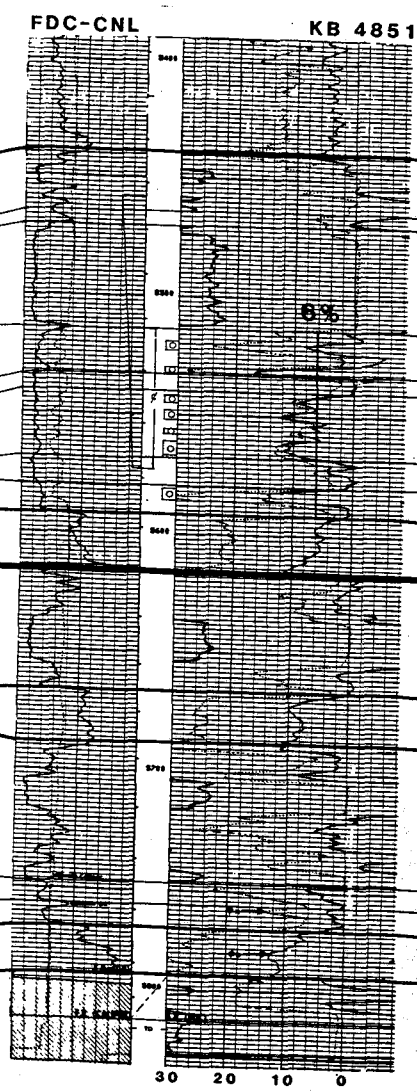
TD 5827

12-84



TD 5826

8-85



TD 5823

8-84

PERF 5771-5784' DESERT CREEK  
 PERF 5543-5596' (GROSS) UPPER ISMAY  
 5543-5548'  
 5551-5554'  
 5559'  
 5565-5578'  
 5593-5596'  
 DST 5514-5605'  
 REC. 20 BBL OIL + 5 BBL O&GCM  
 FP: 171-295: 245-543  
 SIP: 1770 1779  
 HP: 2631 2630

NO CORES

PERF 5753-5766' (GROSS)  
 REC. SMALL AMT OIL ON PUMP  
 PERF 5524-5597' (GROSS)  
 5524-5536'  
 5539-5543'  
 5546-5551'  
 5557-5568'  
 5571-5582'  
 5585-5592'  
 5595-5597'  
 DST 5486-5600'  
 REC 4 BBL O&GCM + 12 BBL HF&MCO  
 FP 307-347: 373-679  
 SIP: 1589 1681  
 HP: 2579 2530  
 CORE 5730-5775'

PERF 5519-5586' (GROSS)  
 5519-5523'  
 5530-5532'  
 5542-5545'  
 5548-5552'  
 5556-5558'  
 5561-5567'  
 5581-5586'  
 DST 5458-5574'  
 REC. 3600' OIL + 200 M  
 FP: 320-665: 718-1457  
 SIP: 1800 1800  
 HP: 3182  
 CORE 5514-5573'  
 8' SUC COLG W/ANHY INC; 4' VFXL FOS  
 LS W/ANHY INC; 6' VFXL TO SUC DOLO.  
 SOME ANHY INC; 42' LS. VFXL. PP, VRY  
 POROSITY, FOS  
 CORE 5540-5599'

IR ISMA  
 T GY CP  
 HY BLEP  
 BRI YF  
 M NO SM  
 CROXL  
 R, N SE  
 BN FOS  
 D STRM  
 SOME A

RXL-VF  
 V FOS  
 BLK. C



SE  
C'

**MERIDIAN**  
NAVAJO FEDERAL 42-9  
1850 FNL 1140 FEL  
9-T39S-R25E

**MILESTONE**  
NAVAJO FED. 9-2  
1320 FNL 600 FEL  
9-T39S-R25E

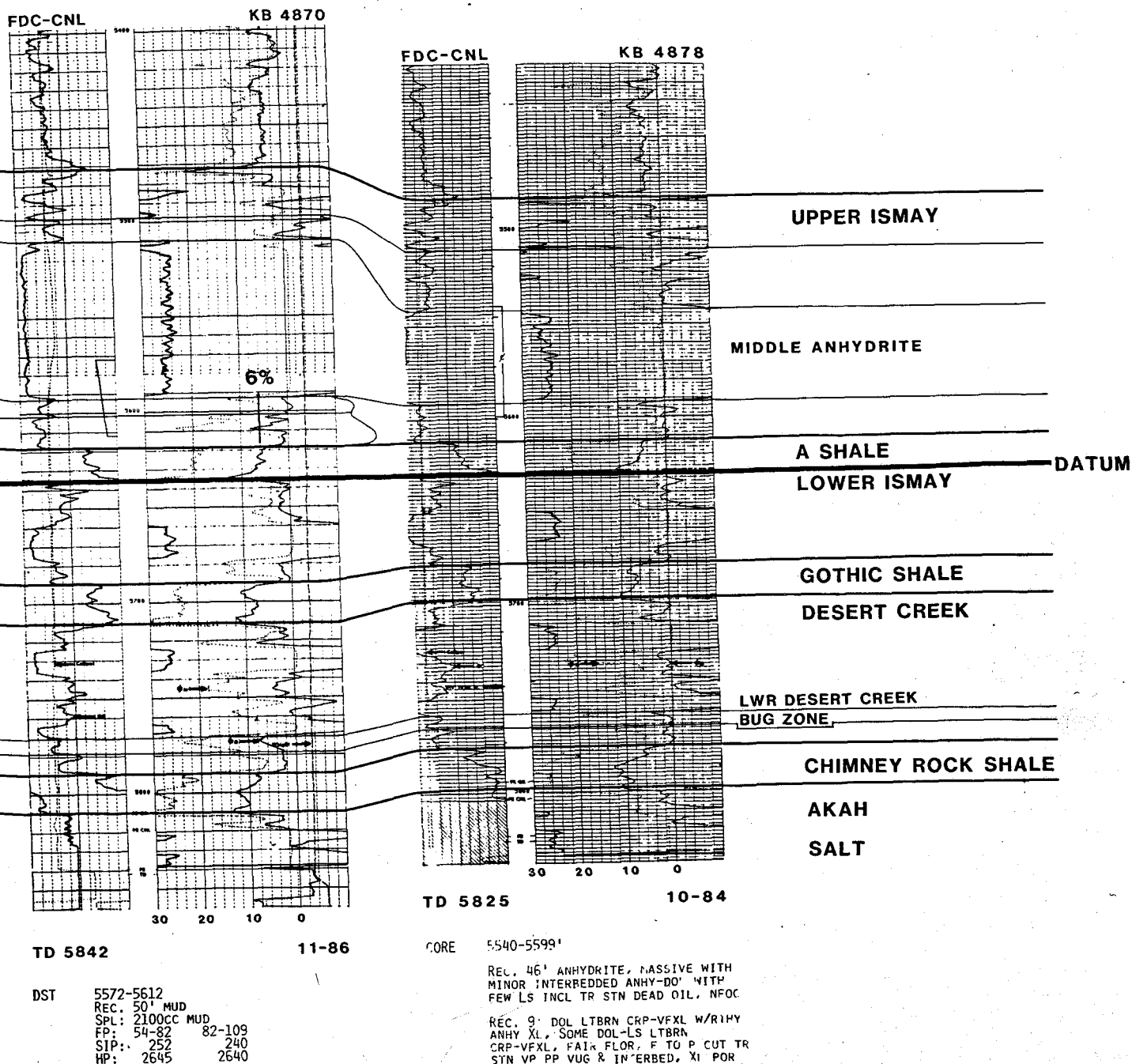


800'



2090'

00'



**MERIDIAN OIL**

**C.L. CRAWLEY**  
GEOSCIENTIST  
**J.O.S./T.K.**  
DRAFTER/GEOTECH  
**9-1-84**  
DATE  
**DENVER**  
OFFICE LOC.  
**2-11-87**  
REVISED DATE  
**T070000EAOI**  
MAP NUMBER

**KIVA FIELD**

San Juan Co., Utah

**STRATIGRAPHIC X-SECTION C-C'**  
**DATUM: BASE/HOVENWEEP SHALE**

Scale VERT. 1"=40'  
HOR. 1"=200'

C.I.

# MERIDIAN OIL

May 7, 1987

DIVISION OF OIL, GAS AND MINING  
Department of Natural Resources  
State of Utah  
355 West North Temple  
III Triad Center, Suite 350  
Salt Lake City, Utah 84108-1203

RE: Request for Exception  
#14-4 Navajo Federal  
Location: SW/4SW/4  
Sec. 4, T39S-R25E, SLM

Gentlemen:

Meridian Oil Inc. plans to commence a well at the following location:

1150' FSL, 1110' FWL, Section 4, T39S-R25E, SLM,  
San Juan County, Utah

This location requires approval as an exception location under Rule 302.1 of the Oil and Gas Conservation General Rules effective December 2, 1985. Under the Rules, this exception may be granted administratively.

Meridian Oil Inc. and its drilling partner, BWAB Inc., own the leasehold and drilling rights within a 460' radius of the subject well and therefore a notice to offset owners is not required.

The reason for the requested exception location is geological. As shown on the attached Exhibit "A", the subject well must be moved to the northeast in order to be within the reserve limits of the geological feature.

A Lease Ownership Plat which also depicts the geologic feature is attached hereto as Exhibit "A". This information is proprietary and very sensitive and therefore it is requested that the State maintain this Plat in a confidential file.

Please indicate your approval for this exception location. Should you have any questions, please do not hesitate to contact the undersigned.

Thank you for your consideration in this matter.

Very truly yours,

APPROVED BY THE STATE  
OF UTAH DIVISION OF  
OIL, GAS, AND MINING

DATE: 5/18/87  
BY: [Signature]

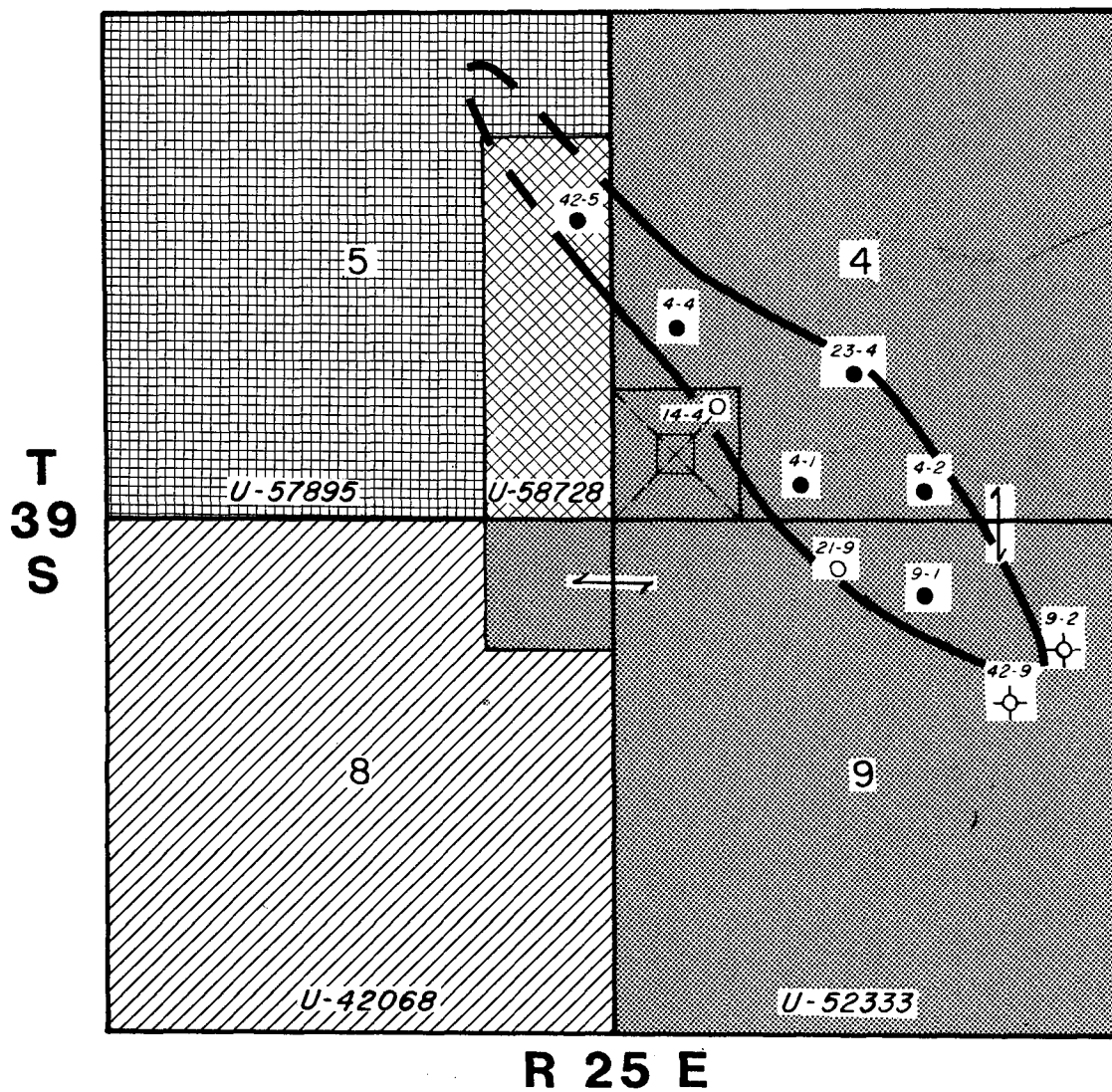
MERIDIAN OIL INC.

William C. Mitchell

William C. Mitchell  
Landman

1492L/2  
Attachment

# EXHIBIT A



Meridian Oil, Inc. 75%  
B.W.A.B. 1984-1986 joint venture 25%  
Fed. Lease #U-52333



Meridian Oil, Inc. 75%  
B.W.A.B. 1984-1986 joint venture 25%  
Fed. Lease #U-57895



Meridian Oil, Inc. 75%  
B.W.A.B. 1984-1986 joint venture 25%  
Fed. Lease #U-58728



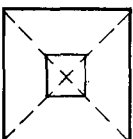
Meridian Oil, Inc. 50%  
Tenneco Oil Co. 50%  
Fed. Lease #U-42068

○ Proposed Location - #14-4 Navajo Federal,  
Sec. 4, 1150' FSL, 1110' FWL

Existing Locations: 4-1 Navajo Federal, sec. 4, 370' FSL, 1940' FWL  
4-2 Navajo Federal, sec. 4, 300' FSL, 2225' FEL  
4-4 Navajo Federal, sec. 4, 1980' FSL, 660' FWL  
9-1 Navajo Federal, sec. 9, 770' FNL, 2010' FEL  
9-2 Navajo Federal, sec. 9, 1320' FNL, 600' FEL  
23-4 Navajo Federal, sec. 4, 1500' FSL, 2500' FWL  
42-9 Navajo Federal, sec. 9, 1140' FEL, 1850' FNL  
42-5 Navajo Federal, sec. 5, 320' FEL, 2130' FNL  
21-9 Navajo Federal, sec. 4, 2350' FWL, 500' FNL (currently drilling)

● Producing Oil Well

⊗ Dry Hole



400 ft. "Window" (Pursuant to order #302)

**MERIDIAN OIL**

**KIVA FIELD**

T 39 S - R 25 E

**SAN JUAN COUNTY, UTAH**

Scale: 1"=2000 Feet

RECEIVED  
APR 17 1987

# FILING FOR WATER IN THE STATE OF UTAH

RECEIVED

APR 17 1987

WATER RIGHTS

Rec. by DLT

Fee Paid \$ 15.00

Platted # 22084

Microfilmed \_\_\_\_\_

Roll # \_\_\_\_\_

## APPLICATION TO APPROPRIATE WATER

For the purpose of acquiring the right to use a portion of the unappropriated water of the State of Utah, application is hereby made to the State Engineer, based upon the following showing of facts, submitted in accordance with the requirements of the Laws of Utah.

WATER USER CLAIM NO. 09 - 1511

APPLICATION NO. T62394

1. PRIORITY OF RIGHT: April 1, 1987

FILING DATE: April 1, 1987

2. OWNER INFORMATION

Name: Meridian Oil Inc.

Address: P.O. Box 1855, Billings, MT 59103

The land is not owned by the applicant(s), see explanatory.

3. QUANTITY OF WATER: 3.0 acre feet (Ac. Ft.)

4. SOURCE: Montezuma Creek & Well DRAINAGE: San Juan River

POINT(S) OF DIVERSION:

COUNTY: San Juan

(1) N. 798 feet, E. 1876 feet, from the SW Corner of Section 28,

Township 38 S, Range 25 E, SLB&M

(2) N. 1350 feet, W. 710 feet, from the SE Corner of Section 06,

Township 39 S, Range 25 E, SLB&M

Source: Montezuma Creek

Description of Diverting Works: Tank Trucks

COMMON DESCRIPTION: 2.5 mi. NE Hatch Trading Post

5. NATURE AND PERIOD OF USE

Oil Exploration From April 30 to May 31.

6. PURPOSE AND EXTENT OF USE

Oil Exploration: Oil Well Drilling

7. PLACE OF USE

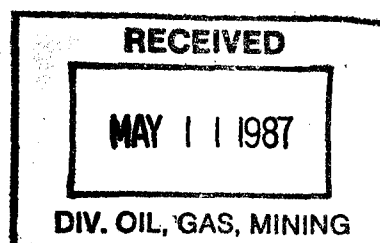
The water is used in all or parts of each of the following legal subdivisions.

	North East Quarter				North West Quarter				South West Quarter				South East Quarter			
TOWN RANGE SEC	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$
39 S 25 E 04											X					

All locations in Salt Lake Base and Meridian

EXPLANATORY

The well to be drilled is the 14-4 Navajo-Federal, located N. 1150 ft. & E. 1110 ft. from SW Cor. Sec. 4, T39S, R25E, SLB&M.



Appropriate

\*\*\*\*\*

The applicant hereby acknowledges he/they are a citizen(s) of the  
United States or intends to become such a citizen.

\*\*\*\*\*

The quantity of water sought to be appropriated is limited to that which  
can be beneficially used for the purpose herein described.

\*\*\*\*\*

The undersigned hereby acknowledges that even though he/they may have been assisted in  
the preparation of the above-numbered application through the courtesy of the employees  
of the Division of Water Rights, all responsibility for the accuracy of the information  
contained therein, at the time of filing, rests with the applicant(s).

---

Signature of Applicant

STATE ENGINEER'S ENDORSEMENT


WATER RIGHT NUMBER: 09 - 1511

APPLICATION NO. T62394

1. April 1, 1987      Application received by MP.
  2. April 3, 1987      Application designated for APPROVAL by MP and SG.
  3. Comments:
- 
- 

Conditions:

This application is hereby APPROVED, dated May 8, 1987, subject to prior rights and this application will expire on August 8, 1987.

  
Robert L. Morgan, P.E.  
State Engineer



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Norman H. Bangerter, Governor  
Dee C. Hansen, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

May 12, 1987

Meridian Oil Incorporated  
P. O. Box 1855  
Billings, Montana 59103

Gentlemen:

Re: Navajo Federal 14-4 - SW SW Sec. 4, T. 39S, R. 25E  
1150' FSL 1110' FWL - San Juan County, Utah

Approval to drill the referenced well is hereby granted in accordance with Rule 302.1, Oil and Gas Conservation General Rules, subject to the following stipulations:

In addition, the following actions are necessary to fully comply with this approval:

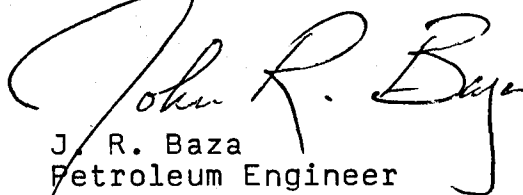
1. Spudding notification to the Division within 24 hours after drilling operations commence.
2. All well operators are responsible for sending an Entity Action Form to the Division of Oil, Gas and Mining within five working days of the time that a new well is spudded or a change in operations or interests necessitates a change in Entity status.
3. Submittal to the Division of completed Form OGC-8-X, Report of Water Encountered During Drilling.
4. Prompt notification to the Division should you determine that it is necessary to plug and abandon this well. Notify John R. Baza, Petroleum Engineer, (Office) (801) 538-5340, (Home) 298-7695, or R. J. Firth, Associate Director, (Home) 571-6068.

Page 2  
Meridian Oil Incorporated  
Navajo Federal 14-4  
May 12, 1987

5. Compliance with the requirements and regulations of Rule 311.3, Associated Gas Flaring, Oil and Gas Conservation General Rules.
6. Prior to commencement of the proposed drilling operations, plans for toilet facilities and the disposal of sanitary waste at the drill site shall be submitted to the local health department having jurisdiction. Any such drilling operations and any subsequent well operations must be conducted in accordance with applicable state and local health department regulations. A list of all local health departments and copies of applicable regulations are available from the Division of Environmental Health, Bureau of General Sanitation, telephone (801) 533-6163.
7. This approval shall expire one (1) year after date of issuance unless substantial and continuous operation is underway or an application for an extension is made prior to the approval expiration date.

The API number assigned to this well is 43-037-31321.

Sincerely,



J. R. Baza  
Petroleum Engineer

as  
Enclosures  
cc: Branch of Fluid Minerals  
D. R. Nielson  
8159T



060224

DIVISION OF OIL, GAS AND MINING

CONFIDENTIAL

SPODDING INFORMATION

API #43-037-31321

NAME OF COMPANY: MERIDIAN OIL COMPANY

WELL NAME: NAVAJO FEDERAL 14-4

SECTION SW SW 4 TOWNSHIP 39S RANGE 25E COUNTY San Juan

DRILLING CONTRACTOR Aztec

RIG # 301

SPODDED: DATE 6-1-87

TIME 12:00 Noon

How Rotary

DRILLING WILL COMMENCE \_\_\_\_\_

REPORTED BY Jimmy Reeder

TELEPHONE # (406) 256-4175

DATE 5-29-87 SIGNED Wm Moore

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE\*  
(Other instructions on re-  
verse side)

Form approved.  
Budget Bureau No. 1004-0135  
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals.)

1. <input type="checkbox"/> OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <u>Injection</u>		5. LEASE DESIGNATION AND SERIAL NO. U-52333
2. NAME OF OPERATOR MERIDIAN OIL INC.		6. IF INDIAN, ALLOTTEE OR TRIBE NAME N/A 061107
3. ADDRESS OF OPERATOR P. O. Box 1855, Billings, MT 59103		7. UNIT AGREEMENT NAME N/A
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface SWSW (1150' FSL - 1110' FWL)		8. FARM OR LEASE NAME Navajo-Federal
14. PERMIT NO. 43-037-31321		9. WELL NO. 14-4
15. ELEVATIONS (Show whether DF, RT, GR, etc.) 4868' GL - 4881'		10. FIELD AND POOL, OR WILDCAT Kiva
		11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Section 4-39S-25E
		12. COUNTY OR PARISH San Juan
		13. STATE Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input checked="" type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) <u>Spud Report</u>	

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Aztec, Rig #301, spudded well @ 1:00 PM 6-1-87. Ran 82' 13-3/8" 54.5# casig w/90 sx "B".  
Set @ 20'

Note:

Board witnessed  
@ 3029'  
connection being  
made on 6/5/87  
@ approx. 11 AM

IDENTIAL INFORMATION

RECEIVED

JUN 10 1987

DIVISION OF  
OIL, GAS & MINING

18. I hereby certify that the foregoing is true and correct

SIGNED <u>Suzanne Nelson</u>	TITLE <u>Sr. Operations Technician</u>	DATE <u>6/5/87</u>
(This space for Federal or State office use)		
APPROVED BY _____	TITLE _____	DATE _____
CONDITIONS OF APPROVAL, IF ANY:		

\*See Instructions on Reverse Side

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE\*  
(Other instructions on re-  
verse side)

Form approved.  
Budget Bureau No. 1004-0135  
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.  
Use "APPLICATION FOR PERMIT—" for such proposals.)

1. <input type="checkbox"/> OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <u>Injection</u>		5. LEASE DESIGNATION AND SERIAL NO. U-52333
2. NAME OF OPERATOR MERIDIAN OIL INC.		6. IF INDIAN, ALLOTTEE OR TRIBE NAME N/A <b>061107</b>
3. ADDRESS OF OPERATOR P. O. Box 1855, Billings, MT 59103		7. UNIT AGREEMENT NAME N/A
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface  SWSW (1150' FSL - 1110' FWL)		8. FARM OR LEASE NAME Navajo-Federal
14. PERMIT NO. 43-037-31321		9. WELL NO. 14-4
15. ELEVATIONS (Show whether DF, RT, GR, etc.) 4868' GL - 4881'		10. FIELD AND POOL, OR WILDCAT Kiva
		11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Section 4-39S-25E
		12. COUNTY OR PARISH San Juan
		13. STATE Utah

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATES SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>	SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input checked="" type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	(Other) <u>Spud Report</u>	

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Aztec, Rig #301, spudded well @ 1:00 PM 6-1-87. Ran 82' 13-3/8" 54.5# casig w/90 sx "B". Set @ 80'.

CONFIDENTIAL INFORMATION

RECEIVED  
JUN 10 1987

DIVISION OF  
OIL, GAS & MINING

18. I hereby certify that the foregoing is true and correct

SIGNED <u>Suzanne D. Nelson</u>	TITLE <u>Sr. Operations Technician</u>	DATE <u>6/5/87</u>
(This space for Federal or State office use)		
APPROVED BY _____	TITLE _____	DATE _____
CONDITIONS OF APPROVAL, IF ANY:		

\*See Instructions on Reverse Side



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Norman H. Bangerter, Governor  
Dee C. Hansen, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

June 16, 1987

Meridian Oil Incorporated  
Post Office Box 1855  
Billings, Montana 59103

Gentlemen:

RE: Navajo Federal #14-4, #43-5, and #21-9 Wells, Section 4, 5, and 9, Township 39 South, Range 25 East, S.L.M., San Juan County, Utah

In accordance with Rule 503(c), Oil and Gas Conservation General Rules, administrative approval to inject water into the referenced wells is granted.

The following actions are necessary to fully comply with this approval:

- 1) Compliance with the UIC requirements for operation, maintenance and reporting for Class II injection wells.
- 2) Conformance with all conditions of the submitted application.

If you have any questions regarding this approval or the necessary requirements, please contact this office.

Best regards,

Dianne R. Nielson  
Director

mfp  
7627U

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE  
(Other instructions on reverse side)

Form approved.  
Budget Bureau No. 1004-0135  
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug a well. Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED  
JUN 18 1987

1. OIL WELL ☐ GAS WELL ☐ OTHER ☐ INJECTION

2. NAME OF OPERATOR  
MERIDIAN OIL INC.

3. ADDRESS OF OPERATOR  
P. O. Box 1855, Billings, MT 59103

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.\*  
See also space 17 below.)  
At surface

SWSW (1150' FSL - 1110' FWL)

14. PERMIT NO.  
43-037-31321

15. ELEVATIONS (Show whether DF, RT, GR, etc.)  
4881' KB

5. LEASE DESIGNATION AND SERIAL NO.

U-52333

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

N/A

7. UNIT AGREEMENT NAME

N/A

8. FARM OR LEASE NAME

Navajo-Federal

9. WELL NO.

14-4

10. FIELD AND POOL, OR WILDCAT

Kiva

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA

Section 4-39S-25E

12. COUNTY OR PARISH

San Juan

13. STATE

Utah

18. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

☐  
☐  
☐  
☐  
☐

PULL OR ALTER CASING

☐  
☐  
☐  
☐  
☐

FRACTURE TREAT

MULTIPLE COMPLETE

SHOOT OR ACIDIZE

ABANDON\*

REPAIR WELL

CHANGE PLANS

(Other)

SUBSEQUENT REPORT OF:

WATER SHUT-OFF

☐  
☐  
☐

FRACTURE TREATMENT

SHOOTING OR ACIDIZING

(Other)

REPAIRING WELL

ALTERING CASING

ABANDONMENT\*

☐  
☒  
☐  
☐

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

9-5/8" casing was run as follows:

56 jts 9-5/8" 32.30# H-40 R-3, set @ 2335'

20 jts 9-5/8" 40# N-80 LT&C R-3, set @ 3300'

CONFIDENTIAL INFORMATION

18. I hereby certify that the foregoing is true and correct

SIGNED

D.R. Hain

TITLE Regional Drilling Engineer

DATE

6/16/87

(This space for Federal or State office use)

APPROVED BY

TITLE

DATE

CONDITIONS OF APPROVAL, IF ANY:

\*See Instructions on Reverse Side

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE  
(Other instructions on reverse side)

Form approved.  
Budget Bureau No. 1004-0135  
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

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Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED  
JUN 18 1987

1. OIL WELL ☐ GAS WELL ☐ OTHER ☐ INJECTION

2. NAME OF OPERATOR  
MERIDIAN OIL INC.

3. ADDRESS OF OPERATOR  
P. O. Box 1855, Billings, MT 59103

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.\*  
See also space 17 below.)  
At surface

SWSW (1150' FSL - 1110' FWL)

14. PERMIT NO.  
43-037-31321

15. ELEVATIONS (Show whether DF, RT, GR, etc.)  
4881' KB

5. LEASE DESIGNATION AND SERIAL NO.

U-52333

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

N/A

7. UNIT AGREEMENT NAME

N/A

8. FARM OR LEASE NAME

Navajo-Federal

9. WELL NO.

14-4

10. FIELD AND POOL, OR WILDCAT

Kiva

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA

Section 4-39S-25E

12. COUNTY OR PARISH

San Juan

13. STATE

Utah

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NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF ☐

FRACTURE TREAT ☐

SHOOT OR ACIDIZE ☐

REPAIR WELL ☐

(Other) ☐

PULL OR ALTER CASING ☐

MULTIPLE COMPLETE ☐

ABANDON\* ☐

CHANGE PLANS ☐

SUBSEQUENT REPORT OF:

WATER SHUT-OFF ☐

FRACTURE TREATMENT ☐

SHOOTING OR ACIDIZING ☐

(Other) ☐

REPAIRING WELL ☐

ALTERING CASING ☒

ABANDONMENT\* ☐

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

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20 jts 9-5/8" 40# N-80 LT&C R-3, set @ 3300'

CONFIDENTIAL INFORMATION

18. I hereby certify that the foregoing is true and correct

SIGNED

D. R. Hain

TITLE Regional Drilling Engineer

DATE

6/16/87

(This space for Federal or State office use)

APPROVED BY

TITLE

DATE

CONDITIONS OF APPROVAL, IF ANY:

\*See Instructions on Reverse Side

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIP  
(Other instructions on reverse side)

Form approved.  
Budget Bureau No. 1004-0135  
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

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Use "APPLICATION FOR PERMIT—" for such proposals.)

1. ☐ OIL WELL ☐ GAS WELL ☐ OTHER INJECTION

2. NAME OF OPERATOR  
MERIDIAN OIL INC.

3. ADDRESS OF OPERATOR  
P. O. Box 1855, Billings, MT 59103

4. LOCATION OF WELL (Report location clearly and in accordance with all BLM instructions.)  
See also space 17 below.  
At surface

SWSW (1150' FSL - 1110' FWL)

14. PERMIT NO.  
43-037-31321

15. ELEVATIONS (Show whether DF, RT, GR, etc.)  
4881' KB

5. LEASE DESIGNATION AND SERIAL NO.

U-52333

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

N/A 062930

7. UNIT AGREEMENT NAME

N/A

8. FARM OR LEASE NAME

Navajo-Federal

9. WELL NO.

14-4

10. FIELD AND POOL, OR WILDCAT

Kiva

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA

Section 4-39S-25E

12. COUNTY OR PARISH 13. STATE

San Juan

Utah

18. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

PULL OR ALTER CASING

FRACTURE TREAT

MULTIPLE COMPLETE

SHOOT OR ACIDIZE

ABANDON\*

REPAIR WELL

CHANGE PLANS

(Other)

SUBSEQUENT REPORT OF:

WATER SHUT-OFF

REPAIRING WELL

FRACTURE TREATMENT

ALTERING CASING

SHOOTING OR ACIDIZING

ABANDONMENT\*

(Other)

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

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20 jts 9-5/8" 40# N-80 LT&C R-3, set @ 3300'

CONFIDENTIAL INFORMATION

18. I hereby certify that the foregoing is true and correct

SIGNED

D.R. Hain

TITLE Regional Drilling Engineer

DATE

6/16/87

(This space for Federal or State office use)

APPROVED BY

TITLE

DATE

CONDITIONS OF APPROVAL, IF ANY:

\*See Instructions on Reverse Side

# MERIDIAN OIL

## TRANSMITTAL LETTER RECORD OF SHIPMENT OF CONFIDENTIAL INFORMATION

TO: Utah Dept. of Natural Resources  
Division of Oil, Gas and Mining  
355 W. North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
Attn: Cynthia Brandt

FROM: C. L. Crawley  
Name  
Sr. Staff Geologist  
Title  
DATE: June 19, 1987  
VIA: Mail

QUANTITY	DESCRIPTION
	<u>Navajo Federal 14-4</u>
<u>1</u>	<u>✓ Formation Density/Compensated Neutron</u>
<u>1</u>	<u>✓ Dual Laterolog/MSFL</u>
<u>1</u>	<u>✓ Borehole Compensated Sonic</u>

CONFIDENTIAL

INSTRUCTIONS: Please acknowledge receipt promptly by signing and returning the copy.

RECEIVED BY: J. Carney DATE: 6-25-87

RECORD OF SHIPMENT OF CONFIDENTIAL INFORMATION



# MERIDIAN OIL

## TRANSMITTAL LETTER RECORD OF SHIPMENT OF CONFIDENTIAL INFORMATION

TO: Utah Dept. of Natural Resources  
Division of Oil, Gas and Mining  
355 W. North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
Attn: Cynthia Brandt

FROM: C. L. Crawley  
Name  
Sr. Staff Geologist  
Title  
DATE: June 23, 1987  
VIA: Mail

### QUANTITY

### DESCRIPTION

	<u>14-4 Navajo Federal</u>
<u>1</u>	<u>✓ Litho-Logical Consultants - Mud Log</u>

INSTRUCTIONS: Please acknowledge receipt promptly by signing and returning the copy.

RECEIVED BY:

Carney

DATE:

6-30-87

## RECORD OF SHIPMENT OF CONFIDENTIAL INFORMATION

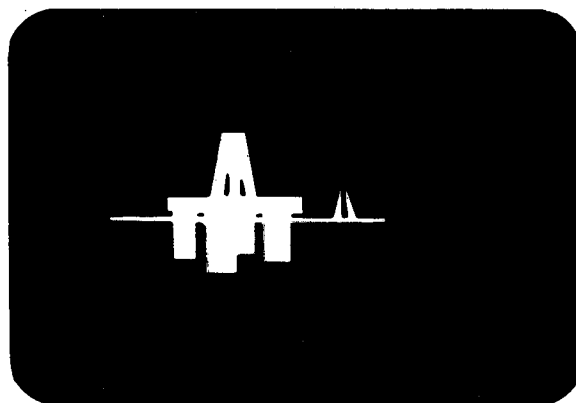
MERIDIAN OIL INC.

14-4 NAVAJO FED.

KIVA FIELD

07/12/87

INJECTION STEP RATE



**G**eoservices  
production

HOUSTON

GULF COAST REGION  
GEOSERVICES, INC.  
14902 Henry Road  
Houston, TX 77060

DENVER

ROCKY MOUNTAIN REGION  
GEOSERVICES, INC.  
4880 Ironton St. Ste. A  
Denver, CO 80239

EVANSTON

GEOSERVICES, INC.  
76 Freedom Lane, Unit G  
Evanston, WY 82930

LAFAYETTE

GEOSERVICES, INC.  
345-H Mouton Rd.  
Lafayette, LA 70505

\*\*\*\*\*  
 Client : MERIDIAN OIL Survey Date : 07/11/87  
 Field Id. : KIVA Well No. : 14-4 NAVAJO FED.  
 \*\*\*\*\*  
 Reader Type: DataView DISK I.D. NO.: D#042

Skip : 10 Variation : 1  
 Cal. Date : 05/23/87 Cal. Number : JL#1  
 Cal. Range : 0-8000 psi Cal. Temp. : 70 C  
 Cal. [ M ] : 1.34544 Cal. [ I ] : -566.431

Tool Number: 83 Sensor No. : PSS-83

\*\*\*\*\*  
 ADDRESS DAY TIME dT dP PRESSURE COMMENTS  
 HH:MM:SS (hr) (psig) (psig)  
 \*\*\*\*\*  
 22 12 00:21:00 2.69  
 23 12 00:22:00 971.41  
 24 12 00:23:00 972.76  
 25 12 00:24:00 974.10  
 26 12 00:25:00 978.14  
 27 12 00:26:00 983.52  
 28 12 00:27:00 988.90  
 29 12 00:28:00 994.28  
 30 12 00:29:00 999.66  
 31 12 00:30:00 1005.05  
 32 12 00:31:00 1010.43  
 33 12 00:32:00 1015.81  
 34 12 00:33:00 1019.85  
 35 12 00:34:00 1025.23  
 36 12 00:35:00 1031.95  
 37 12 00:36:00 1038.68  
 38 12 00:37:00 1045.41  
 39 12 00:38:00 1050.79  
 40 12 00:39:00 1057.52  
 41 12 00:40:00 1064.25  
 42 12 00:41:00 1069.63  
 43 12 00:42:00 1075.01  
 44 12 00:43:00 1080.39  
 45 12 00:44:00 1084.43  
 46 12 00:45:00 1089.81  
 47 12 00:46:00 1093.85  
 48 12 00:47:00 1099.23  
 49 12 00:48:00 1104.61  
 50 12 00:49:00 1108.65  
 51 12 00:50:00 1114.03  
 52 12 00:51:00 1118.06  
 53 12 00:52:00 1123.44  
 54 12 00:53:00 1127.48  
 55 12 00:54:00 1132.86  
 56 12 00:55:00 1135.55  
 57 12 00:56:00 1138.24  
 58 12 00:57:00 1154.39  
 62 12 01:01:00 1155.74  
 64 12 01:03:00 1157.08  
 67 12 01:06:00 1158.43

GAUGES AT 5644' KB

Client : MERIDIAN OIL  
Field Id. : KIVA

Survey Date : 07/11/87  
Well No. : 14-4 NAVAJO FED.

\*\*\*\*\*  
ADDRESS DAY TIME dT dP PRESSURE COMMENTS  
HH:MM:SS (hr) (psig) (psig)  
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69	12	01:08:00			1159.77	
75	12	01:14:00			1161.12	
81	12	01:20:00			1162.46	
91	12	01:30:00			1162.46	
101	12	01:40:00			1162.46	
111	12	01:50:00			1162.46	
121	12	02:00:00			1162.46	
131	12	02:10:00			1162.46	
141	12	02:20:00			1162.46	
151	12	02:30:00			1162.46	
161	12	02:40:00			1161.12	
162	12	02:41:00			1162.46	
166	12	02:45:00			1161.12	
167	12	02:46:00			1162.46	
169	12	02:48:00			1161.12	
172	12	02:51:00			1162.46	
173	12	02:52:00			1161.12	
175	12	02:54:00			1162.46	
176	12	02:55:00			1161.12	
177	12	02:56:00			1162.46	
180	12	02:59:00			1161.12	
181	12	03:00:00			1162.46	
182	12	03:01:00			1161.12	
184	12	03:03:00			1162.46	
188	12	03:07:00			1161.12	
189	12	03:08:00			1162.46	
191	12	03:10:00			1161.12	
194	12	03:13:00			1162.46	
195	12	03:14:00			1161.12	
196	12	03:15:00			1162.46	
198	12	03:17:00			1161.12	
208	12	03:27:00			1161.12	
215	12	03:34:00			1162.46	
216	12	03:35:00			1161.12	
221	12	03:40:00			1162.46	
222	12	03:41:00			1161.12	
227	12	03:46:00			1162.46	
228	12	03:47:00			1161.12	
238	12	03:57:00			1161.12	
248	12	04:07:00			1161.12	
258	12	04:17:00			1161.12	
268	12	04:27:00			1161.12	
278	12	04:37:00			1161.12	
288	12	04:47:00			1161.12	
298	12	04:57:00			1161.12	
308	12	05:07:00			1161.12	
318	12	05:17:00			1161.12	
328	12	05:27:00			1161.12	
338	12	05:37:00			1161.12	
348	12	05:47:00			1161.12	
358	12	05:57:00			1161.12	

Geoservices Inc. Production

Client : MERIDIAN OIL

Survey Date : 07/11/87

Field Id. : KIVA

Well No. : 14-4 NAVAJO FED.

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ADDRESS	DAY	TIME	dT	dP	PRESSURE	COMMENTS
		HH:MM:SS	(hr)	(psig)	(psig)	

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368	12	06:07:00			1161.12	
378	12	06:17:00			1161.12	
388	12	06:27:00			1161.12	
398	12	06:37:00			1161.12	
408	12	06:47:00			1161.12	
410	12	06:49:00			1159.77	
411	12	06:50:00			1161.12	
421	12	07:00:00			1161.12	
423	12	07:02:00	0.0000	0.00	1161.12	END OF STATIC
424	12	07:03:00	0.0166	4.04	1165.15	START INJECTION TEST
425	12	07:04:00	0.0333	9.42	1170.54	INJECTION RATE 0.5 BBL/MIN
426	12	07:05:00	0.0500	14.80	1175.92	
427	12	07:06:00	0.0666	18.84	1179.95	
428	12	07:07:00	0.0833	24.22	1185.34	
429	12	07:08:00	0.1000	28.25	1189.37	
430	12	07:09:00	0.1166	33.64	1194.75	
431	12	07:10:00	0.1333	37.67	1198.79	
432	12	07:11:00	0.1500	41.71	1202.83	
433	12	07:12:00	0.1666	44.40	1205.52	
434	12	07:13:00	0.1833	48.44	1209.55	
435	12	07:14:00	0.2000	52.47	1213.59	
436	12	07:15:00	0.2166	56.51	1217.63	
437	12	07:16:00	0.2333	60.54	1221.66	
438	12	07:17:00	0.2500	63.24	1224.35	
439	12	07:18:00	0.2666	67.27	1228.39	
440	12	07:19:00	0.2833	71.31	1232.43	
441	12	07:20:00	0.3000	74.00	1235.12	
442	12	07:21:00	0.3166	78.04	1239.15	
443	12	07:22:00	0.3333	82.07	1243.19	
444	12	07:23:00	0.3500	84.76	1245.88	
445	12	07:24:00	0.3666	87.45	1248.57	
446	12	07:25:00	0.3833	91.49	1252.61	
447	12	07:26:00	0.4000	95.53	1256.64	
448	12	07:27:00	0.4166	98.22	1259.33	
449	12	07:28:00	0.4333	100.91	1262.03	
450	12	07:29:00	0.4500	103.60	1264.72	
451	12	07:30:00	0.4666	106.29	1267.41	
452	12	07:31:00	0.4833	108.98	1270.10	
453	12	07:32:00	0.5000	113.02	1274.13	
454	12	07:33:00	0.5166	115.71	1276.83	
455	12	07:34:00	0.5333	119.74	1280.86	
456	12	07:35:00	0.5500	123.78	1284.90	
457	12	07:36:00	0.5666	126.47	1287.59	
458	12	07:37:00	0.5833	130.51	1291.63	
459	12	07:38:00	0.6000	134.54	1295.66	
460	12	07:39:00	0.6166	138.58	1299.70	
461	12	07:40:00	0.6333	143.96	1305.08	
462	12	07:41:00	0.6500	149.34	1310.46	
463	12	07:42:00	0.6666	154.73	1315.84	
464	12	07:43:00	0.6833	160.11	1321.22	
465	12	07:44:00	0.7000	165.49	1326.61	

Geoservices Inc. Production

Client : MERIDIAN OIL

Survey Date : 07/11/87

Field Id. : KIVA

Well No. : 14-4 NAVAJO FED.

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ADDRESS	DAY	TIME	dT	dP	PRESSURE	COMMENTS
		HH:MM:SS	(hr)	(psig)	(psig)	

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466	12	07:45:00	0.7166	170.87	1331.99	
467	12	07:46:00	0.7333	176.25	1337.37	
468	12	07:47:00	0.7500	181.63	1342.75	
469	12	07:48:00	0.7666	188.36	1349.48	
470	12	07:49:00	0.7833	193.74	1354.86	
471	12	07:50:00	0.8000	197.78	1358.90	
472	12	07:51:00	0.8166	200.47	1361.59	
473	12	07:52:00	0.8333	207.20	1368.32	
474	12	07:53:00	0.8500	212.58	1373.70	
475	12	07:54:00	0.8666	216.62	1377.73	
476	12	07:55:00	0.8833	222.00	1383.12	
477	12	07:56:00	0.9000	223.34	1384.46	
478	12	07:57:00	0.9166	226.03	1387.15	
479	12	07:58:00	0.9333	231.42	1392.53	
480	12	07:59:00	0.9500	239.49	1400.61	
481	12	08:00:00	0.9666	244.87	1405.99	
482	12	08:01:00	0.9833	250.25	1411.37	
483	12	08:02:00	1.0000	251.60	1412.72	
484	12	08:03:00	1.0166	254.29	1415.41	
485	12	08:04:00	1.0333	255.63	1416.75	
486	12	08:05:00	1.0500	262.36	1423.48	
487	12	08:06:00	1.0666	266.40	1427.51	
488	12	08:07:00	1.0833	269.09	1430.21	
489	12	08:08:00	1.1000	271.78	1432.90	
490	12	08:09:00	1.1166	277.16	1438.28	
491	12	08:10:00	1.1333	278.51	1439.62	
492	12	08:11:00	1.1500	282.54	1443.66	
493	12	08:12:00	1.1666	285.23	1446.35	
494	12	08:13:00	1.1833	289.27	1450.39	
495	12	08:14:00	1.2000	293.31	1454.42	
496	12	08:15:00	1.2166	297.34	1458.46	
497	12	08:16:00	1.2333	301.38	1462.50	
498	12	08:17:00	1.2500	306.76	1467.88	
499	12	08:18:00	1.2666	310.80	1471.91	
500	12	08:19:00	1.2833	314.83	1475.95	
501	12	08:20:00	1.3000	320.22	1481.33	
502	12	08:21:00	1.3166	324.25	1485.37	
503	12	08:22:00	1.3333	328.29	1489.41	
504	12	08:23:00	1.3500	333.67	1494.79	
505	12	08:24:00	1.3666	335.02	1496.13	
506	12	08:25:00	1.3833	340.40	1501.51	
507	12	08:26:00	1.4000	344.43	1505.55	
508	12	08:27:00	1.4166	348.47	1509.59	
509	12	08:28:00	1.4333	351.16	1512.28	
510	12	08:29:00	1.4500	353.85	1514.97	
511	12	08:30:00	1.4666	357.89	1519.00	
512	12	08:31:00	1.4833	360.58	1521.70	
513	12	08:32:00	1.5000	363.27	1524.39	
514	12	08:33:00	1.5166	374.03	1535.15	
515	12	08:34:00	1.5333	394.21	1555.33	
516	12	08:35:00	1.5500	413.05	1574.17	

END OF 0.5 BBL/MIN  
START 1.0 BBL/MIN

Client : MERIDIAN OIL

Survey Date : 07/11/87

Field Id. : KIVA

Well No. : 14-4 NAVAJO FED.

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ADDRESS	DAY	TIME HH:MM:SS	dT (hr)	dP (psig)	PRESSURE (psig)	COMMENTS
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517	12	08:36:00	1.5666	425.16	1586.28	
518	12	08:37:00	1.5833	435.92	1597.04	
519	12	08:38:00	1.6000	439.96	1601.08	
520	12	08:39:00	1.6166	449.38	1610.50	
521	12	08:40:00	1.6333	457.45	1618.57	
522	12	08:41:00	1.6500	464.18	1625.30	
523	12	08:42:00	1.6666	474.94	1636.06	
524	12	08:43:00	1.6833	484.36	1645.48	
525	12	08:44:00	1.7000	496.47	1657.59	
526	12	08:45:00	1.7166	507.23	1668.35	
527	12	08:46:00	1.7333	519.34	1680.46	
528	12	08:47:00	1.7500	530.10	1691.22	
529	12	08:48:00	1.7666	540.87	1701.99	
530	12	08:49:00	1.7833	551.63	1712.75	
531	12	08:50:00	1.8000	561.05	1722.17	
532	12	08:51:00	1.8166	570.47	1731.58	
533	12	08:52:00	1.8333	581.23	1742.35	
534	12	08:53:00	1.8500	587.96	1749.08	
535	12	08:54:00	1.8666	601.41	1762.53	
536	12	08:55:00	1.8833	609.49	1770.60	
537	12	08:56:00	1.9000	618.90	1780.02	
538	12	08:57:00	1.9166	628.32	1789.44	
539	12	08:58:00	1.9333	636.39	1797.51	
540	12	08:59:00	1.9500	645.81	1806.93	
541	12	09:00:00	1.9666	653.89	1815.00	
542	12	09:01:00	1.9833	661.96	1823.08	
543	12	09:02:00	2.0000	670.03	1831.15	
544	12	09:03:00	2.0166	678.10	1839.22	
545	12	09:04:00	2.0333	686.18	1847.29	
546	12	09:05:00	2.0500	695.59	1856.71	
547	12	09:06:00	2.0666	703.67	1864.78	
548	12	09:07:00	2.0833	710.39	1871.51	
549	12	09:08:00	2.1000	718.47	1879.58	
550	12	09:09:00	2.1166	726.54	1887.66	
551	12	09:10:00	2.1333	733.27	1894.38	
552	12	09:11:00	2.1500	739.99	1901.11	
553	12	09:12:00	2.1666	748.07	1909.18	
554	12	09:13:00	2.1833	754.79	1915.91	
555	12	09:14:00	2.2000	762.87	1923.98	
556	12	09:15:00	2.2166	770.94	1932.06	
557	12	09:16:00	2.2333	776.32	1937.44	
558	12	09:17:00	2.2500	783.05	1944.16	
559	12	09:18:00	2.2666	791.12	1952.24	
560	12	09:19:00	2.2833	796.50	1957.62	
561	12	09:20:00	2.3000	804.57	1965.69	
562	12	09:21:00	2.3166	811.30	1972.42	
563	12	09:22:00	2.3333	818.03	1979.15	
564	12	09:23:00	2.3500	824.76	1985.87	
565	12	09:24:00	2.3666	830.14	1991.26	
566	12	09:25:00	2.3833	836.87	1997.98	
567	12	09:26:00	2.4000	843.59	2004.71	

# Geoservices Inc. Production

Client : MERIDIAN OIL

Survey Date : 07/11/87

Field Id. : KIVA

Well No. : 14-4 NAVAJO FED.

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ADDRESS	DAY	TIME	dT	dP	PRESSURE	COMMENTS
		HH:MM:SS	(hr)	(psig)	(psig)	

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568	12	09:27:00	2.4166	850.32	2011.44	
569	12	09:28:00	2.4333	855.70	2016.82	
570	12	09:29:00	2.4500	862.43	2023.55	
571	12	09:30:00	2.4666	867.81	2028.93	
572	12	09:31:00	2.4833	874.54	2035.65	
573	12	09:32:00	2.5000	879.92	2041.04	
574	12	09:33:00	2.5166	886.65	2047.76	
575	12	09:34:00	2.5333	893.37	2054.49	
576	12	09:35:00	2.5500	898.76	2059.87	
577	12	09:36:00	2.5666	904.14	2065.25	
578	12	09:37:00	2.5833	910.86	2071.98	
579	12	09:38:00	2.6000	916.25	2077.36	
580	12	09:39:00	2.6166	922.97	2084.09	
581	12	09:40:00	2.6333	928.36	2089.47	
582	12	09:41:00	2.6500	933.74	2094.85	
583	12	09:42:00	2.6666	939.12	2100.24	
584	12	09:43:00	2.6833	945.85	2106.96	
585	12	09:44:00	2.7000	951.23	2112.35	
586	12	09:45:00	2.7166	953.92	2115.04	
587	12	09:46:00	2.7333	961.99	2123.11	
588	12	09:47:00	2.7500	967.37	2128.49	
589	12	09:48:00	2.7666	972.75	2133.87	
590	12	09:49:00	2.7833	978.14	2139.25	
591	12	09:50:00	2.8000	983.52	2144.64	
592	12	09:51:00	2.8166	987.55	2148.67	
593	12	09:52:00	2.8333	992.94	2154.05	
594	12	09:53:00	2.8500	999.66	2160.78	
595	12	09:54:00	2.8666	1005.05	2166.16	
596	12	09:55:00	2.8833	1009.08	2170.20	
597	12	09:56:00	2.9000	1014.46	2175.58	
598	12	09:57:00	2.9166	1021.19	2182.31	
599	12	09:58:00	2.9333	1026.57	2187.69	
600	12	09:59:00	2.9500	1031.95	2193.07	
601	12	10:00:00	2.9666	1037.34	2198.45	
602	12	10:01:00	2.9833	1042.72	2203.84	
603	12	10:02:00	3.0000	1050.79	2211.91	END OF 1.0 BBL/MIN
604	12	10:03:00	3.0166	1088.46	2249.58	START 1.5 BBL/MIN
605	12	10:04:00	3.0333	1112.68	2273.80	
606	12	10:05:00	3.0500	1134.21	2295.33	
607	12	10:06:00	3.0666	1154.39	2315.51	
608	12	10:07:00	3.0833	1179.95	2341.07	
609	12	10:08:00	3.1000	1204.17	2365.29	
610	12	10:09:00	3.1166	1227.04	2388.16	
611	12	10:10:00	3.1333	1252.61	2413.72	
612	12	10:11:00	3.1500	1291.62	2452.74	
613	12	10:12:00	3.1666	1321.22	2482.34	
614	12	10:13:00	3.1833	1344.10	2505.21	
615	12	10:14:00	3.2000	1364.28	2525.40	
616	12	10:15:00	3.2166	1383.11	2544.23	
617	12	10:16:00	3.2333	1403.30	2564.41	
618	12	10:17:00	3.2500	1426.17	2587.29	



Geoservices Inc. Production

Client : MERIDIAN OIL

Survey Date : 07/11/87

Field Id. : KIVA

Well No. : 14-4 NAVAJO FED.

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ADDRESS	DAY	TIME	dT	dP	PRESSURE	COMMENTS
		HH:MM:SS	(hr)	(psig)	(psig)	

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619	12	10:18:00	3.2666	1445.01	2606.12	
620	12	10:19:00	3.2833	1462.50	2623.61	
621	12	10:20:00	3.3000	1478.64	2639.76	
622	12	10:21:00	3.3166	1496.13	2657.25	
623	12	10:22:00	3.3333	1513.62	2674.74	
624	12	10:23:00	3.3500	1529.77	2690.89	
625	12	10:24:00	3.3666	1543.22	2704.34	
626	12	10:25:00	3.3833	1556.68	2717.79	
627	12	10:26:00	3.4000	1568.79	2729.90	
628	12	10:27:00	3.4166	1579.55	2740.67	
629	12	10:28:00	3.4333	1591.66	2752.78	
630	12	10:29:00	3.4500	1602.42	2763.54	
631	12	10:30:00	3.4666	1613.19	2774.30	
632	12	10:31:00	3.4833	1622.60	2783.72	
633	12	10:32:00	3.5000	1632.02	2793.14	
634	12	10:33:00	3.5166	1641.44	2802.56	
635	12	10:34:00	3.5333	1650.86	2811.97	
636	12	10:35:00	3.5500	1658.93	2820.05	
637	12	10:36:00	3.5666	1668.35	2829.47	
638	12	10:37:00	3.5833	1676.42	2837.54	
639	12	10:38:00	3.6000	1683.15	2844.27	
640	12	10:39:00	3.6166	1691.22	2852.34	
641	12	10:40:00	3.6333	1704.68	2865.79	
642	12	10:41:00	3.6500	1739.66	2900.77	
643	12	10:42:00	3.6666	1766.57	2927.68	
644	12	10:43:00	3.6833	1788.09	2949.21	
645	12	10:44:00	3.7000	1786.75	2947.86	
646	12	10:45:00	3.7166	1792.13	2953.25	
647	12	10:46:00	3.7333	1800.20	2961.32	
648	12	10:47:00	3.7500	1808.27	2969.39	
649	12	10:48:00	3.7666	1816.35	2977.46	
650	12	10:49:00	3.7833	1824.42	2985.54	
651	12	10:50:00	3.8000	1832.49	2993.61	
652	12	10:51:00	3.8166	1840.57	3001.68	
653	12	10:52:00	3.8333	1845.95	3007.06	
654	12	10:53:00	3.8500	1854.02	3015.14	
655	12	10:54:00	3.8666	1860.75	3021.86	
656	12	10:55:00	3.8833	1867.47	3028.59	
657	12	10:56:00	3.9000	1874.20	3035.32	
658	12	10:57:00	3.9166	1880.93	3042.05	
659	12	10:58:00	3.9333	1887.66	3048.77	
660	12	10:59:00	3.9500	1894.38	3055.50	
661	12	11:00:00	3.9666	1901.11	3062.23	
662	12	11:01:00	3.9833	1906.49	3067.61	
663	12	11:02:00	4.0000	1913.22	3074.34	
664	12	11:03:00	4.0166	1919.95	3081.06	
665	12	11:04:00	4.0333	1925.33	3086.45	
666	12	11:05:00	4.0500	1932.06	3093.17	
667	12	11:06:00	4.0666	1938.78	3099.90	
668	12	11:07:00	4.0833	1942.82	3103.94	
669	12	11:08:00	4.1000	1949.55	3110.66	

Geoservices Inc. Production

Client : MERIDIAN OIL

Survey Date : 07/11/87

Field Id. : KIVA

Well No. : 14-4 NAVAJO FED.

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ADDRESS	DAY	TIME HH:MM:SS	dT (hr)	dP (psig)	PRESSURE (psig)	COMMENTS
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670	12	11:09:00	4.1166	1954.93	3116.05	
671	12	11:10:00	4.1333	1960.31	3121.43	
672	12	11:11:00	4.1500	1967.04	3128.15	
673	12	11:12:00	4.1666	1973.76	3134.88	
674	12	11:13:00	4.1833	1980.49	3141.61	
675	12	11:14:00	4.2000	1987.22	3148.34	
676	12	11:15:00	4.2166	1992.60	3153.72	
677	12	11:16:00	4.2333	1999.33	3160.44	
678	12	11:17:00	4.2500	2004.71	3165.83	
679	12	11:18:00	4.2666	2010.09	3171.21	
680	12	11:19:00	4.2833	2015.47	3176.59	
681	12	11:20:00	4.3000	2020.85	3181.97	
682	12	11:21:00	4.3166	2026.24	3187.35	
683	12	11:22:00	4.3333	2031.62	3192.74	
684	12	11:23:00	4.3500	2038.35	3199.46	
685	12	11:24:00	4.3666	2043.73	3204.84	
686	12	11:25:00	4.3833	2049.11	3210.23	
687	12	11:26:00	4.4000	2055.84	3216.95	
688	12	11:27:00	4.4166	2059.87	3220.99	
689	12	11:28:00	4.4333	2065.25	3226.37	
690	12	11:29:00	4.4500	2071.98	3233.10	
691	12	11:30:00	4.4666	2076.02	3237.13	
692	12	11:31:00	4.4833	2080.05	3241.17	
693	12	11:32:00	4.5000	2151.36	3312.48	
694	12	11:33:00	4.5166	2272.45	3433.57	
695	12	11:34:00	4.5333	2365.29	3526.40	
696	12	11:35:00	4.5500	2446.01	3607.13	
697	12	11:36:00	4.5666	2505.21	3666.33	
698	12	11:37:00	4.5833	2559.03	3720.15	
699	12	11:38:00	4.6000	2603.43	3764.55	
700	12	11:39:00	4.6166	2638.41	3799.53	
701	12	11:40:00	4.6333	2673.39	3834.51	
702	12	11:41:00	4.6500	2701.65	3862.77	
703	12	11:42:00	4.6666	2728.56	3889.67	
704	12	11:43:00	4.6833	2752.78	3913.89	
705	12	11:44:00	4.7000	2776.99	3938.11	
706	12	11:45:00	4.7166	2797.17	3958.29	
707	12	11:46:00	4.7333	2818.70	3979.82	
708	12	11:47:00	4.7500	2836.19	3997.31	
709	12	11:48:00	4.7666	2853.68	4014.80	
710	12	11:49:00	4.7833	2869.83	4030.95	
711	12	11:50:00	4.8000	2888.66	4049.78	
712	12	11:51:00	4.8166	2899.43	4060.55	
713	12	11:52:00	4.8333	2914.23	4075.35	
714	12	11:53:00	4.8500	2926.34	4087.45	
715	12	11:54:00	4.8666	2970.74	4131.85	
716	12	11:55:00	4.8833	3008.41	4169.53	
717	12	11:56:00	4.9000	3035.32	4196.44	
718	12	11:57:00	4.9166	3054.15	4215.27	
719	12	11:58:00	4.9333	3078.37	4239.49	
720	12	11:59:00	4.9500	3097.21	4258.33	

END OF 1.5 BBL/MIN  
START 2.0 BBL/MIN

Geoservices Inc. Production

Client : MERIDIAN OIL  
Field Id. : KIVA

Survey Date : 07/11/87  
Well No. : 14-4 NAVAJO FED.

*****						
ADDRESS	DAY	TIME	dT	dP	PRESSURE	COMMENTS
		HH:MM:SS	(hr)	(psig)	(psig)	
*****						
721	12	12:00:00	4.9666	3116.04	4277.16	
722	12	12:01:00	4.9833	3134.88	4296.00	
723	12	12:02:00	5.0000	3151.03	4312.14	
724	12	12:03:00	5.0166	3167.17	4328.29	
725	12	12:04:00	5.0333	3180.63	4341.74	
726	12	12:05:00	5.0500	3198.12	4359.23	
727	12	12:06:00	5.0666	3210.23	4371.34	
728	12	12:07:00	5.0833	3227.72	4388.83	
729	12	12:08:00	5.1000	3238.48	4399.60	
730	12	12:09:00	5.1166	3249.24	4410.36	
731	12	12:10:00	5.1333	3268.08	4429.20	
732	12	12:11:00	5.1500	3276.15	4437.27	
733	12	12:12:00	5.1666	3289.61	4450.72	
734	12	12:13:00	5.1833	3303.06	4464.18	
735	12	12:14:00	5.2000	3316.52	4477.63	
736	12	12:15:00	5.2166	3325.93	4487.05	
737	12	12:16:00	5.2333	3336.70	4497.81	
738	12	12:17:00	5.2500	3350.15	4511.27	
739	12	12:18:00	5.2666	3358.22	4519.34	
740	12	12:19:00	5.2833	3379.75	4540.87	
741	12	12:20:00	5.3000	3414.73	4575.85	
742	12	12:21:00	5.3166	3438.95	4600.07	
743	12	12:22:00	5.3333	3457.79	4618.90	
744	12	12:23:00	5.3500	3480.66	4641.78	
745	12	12:24:00	5.3666	3496.80	4657.92	
746	12	12:25:00	5.3833	3515.64	4676.76	
747	12	12:26:00	5.4000	3527.75	4688.87	
748	12	12:27:00	5.4166	3545.24	4706.36	
749	12	12:28:00	5.4333	3554.66	4715.78	
750	12	12:29:00	5.4500	3568.11	4729.23	
751	12	12:30:00	5.4666	3582.91	4744.03	
752	12	12:31:00	5.4833	3597.71	4758.83	
753	12	12:32:00	5.5000	3608.48	4769.59	
754	12	12:33:00	5.5166	3625.97	4787.08	
755	12	12:34:00	5.5333	3635.39	4796.50	
756	12	12:35:00	5.5500	3647.49	4808.61	
757	12	12:36:00	5.5666	3659.60	4820.72	
758	12	12:37:00	5.5833	3666.33	4827.45	
759	12	12:38:00	5.6000	3682.48	4843.59	
760	12	12:39:00	5.6166	3691.89	4853.01	
761	12	12:40:00	5.6333	3702.66	4863.77	
762	12	12:41:00	5.6500	3713.42	4874.54	
763	12	12:42:00	5.6666	3725.53	4886.65	
764	12	12:43:00	5.6833	3733.60	4894.72	
765	12	12:44:00	5.7000	3749.75	4910.87	
766	12	12:45:00	5.7166	3755.13	4916.25	
767	12	12:46:00	5.7333	3769.93	4931.05	
768	12	12:47:00	5.7500	3779.35	4940.47	
769	12	12:48:00	5.7666	3794.15	4955.27	
770	12	12:49:00	5.7833	3803.57	4964.68	
771	12	12:50:00	5.8000	3810.29	4971.41	

Geoservices Inc. Production

Client : MERIDIAN OIL

Survey Date : 07/11/87

Field Id. : KIVA

Well No. : 14-4 NAVAJO FED.

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ADDRESS	DAY	TIME HH:MM:SS	dT (hr)	dP (psig)	PRESSURE (psig)	COMMENTS
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772	12	12:51:00	5.8166	3818.37	4979.48	
773	12	12:52:00	5.8333	3831.82	4992.94	
774	12	12:53:00	5.8500	3841.24	5002.36	
775	12	12:54:00	5.8666	3845.27	5006.39	
776	12	12:55:00	5.8833	3858.73	5019.85	
777	12	12:56:00	5.9000	3865.46	5026.57	
778	12	12:57:00	5.9166	3877.57	5038.68	
779	12	12:58:00	5.9333	3885.64	5046.75	
780	12	12:59:00	5.9500	3895.06	5056.17	
781	12	13:00:00	5.9666	3899.09	5060.21	
782	12	13:01:00	5.9833	3909.86	5070.97	END OF 2.0 BBL/MIN
783	12	13:02:00	6.0000	4047.09	5208.21	START 2.5 BBL/MIN
784	12	13:03:00	6.0166	4201.82	5362.93	
785	12	13:04:00	6.0333	4252.94	5414.06	
786	12	13:05:00	6.0500	4313.49	5474.61	
787	12	13:06:00	6.0666	4353.85	5514.97	
788	12	13:07:00	6.0833	4390.18	5551.30	
789	12	13:08:00	6.1000	4415.74	5576.86	
790	12	13:09:00	6.1166	4444.00	5605.11	
791	12	13:10:00	6.1333	4481.67	5642.79	
792	12	13:11:00	6.1500	4503.20	5664.31	
793	12	13:12:00	6.1666	4509.92	5671.04	
794	12	13:13:00	6.1833	4378.07	5539.19	
795	12	13:14:00	6.2000	4551.63	5712.75	
796	12	13:15:00	6.2166	4538.18	5699.29	
797	12	13:16:00	6.2333	4526.07	5687.19	
798	12	13:17:00	6.2500	4527.41	5688.53	
799	12	13:18:00	6.2666	4532.80	5693.91	
800	12	13:19:00	6.2833	4536.83	5697.95	
801	12	13:20:00	6.3000	4543.56	5704.68	
802	12	13:21:00	6.3166	4547.60	5708.71	
803	12	13:22:00	6.3333	4557.01	5718.13	
804	12	13:23:00	6.3500	4566.43	5727.55	
805	12	13:24:00	6.3666	4574.50	5735.62	
806	12	13:25:00	6.3833	4581.23	5742.35	
807	12	13:26:00	6.4000	4590.65	5751.77	
808	12	13:27:00	6.4166	4600.07	5761.19	
809	12	13:28:00	6.4333	4610.83	5771.95	
810	12	13:29:00	6.4500	4617.56	5778.68	
811	12	13:30:00	6.4666	4629.67	5790.78	
812	12	13:31:00	6.4833	4632.36	5793.48	
813	12	13:32:00	6.5000	4643.12	5804.24	
814	12	13:33:00	6.5166	4656.58	5817.69	
815	12	13:34:00	6.5333	4659.27	5820.38	
816	12	13:35:00	6.5500	4667.34	5828.46	
817	12	13:36:00	6.5666	4680.79	5841.91	
818	12	13:37:00	6.5833	4683.48	5844.60	
819	12	13:38:00	6.6000	4694.25	5855.37	
820	12	13:39:00	6.6166	4700.98	5862.09	
821	12	13:40:00	6.6333	4710.39	5871.51	
823	12	13:42:00	6.6666	4721.16	5882.27	

Client : MERIDIAN OIL  
Field Id. : KIVA

Survey Date : 07/11/87  
Well No. : 14-4 NAVAJO FED.

*****						
ADDRESS	DAY	TIME	dT	dP	PRESSURE	COMMENTS
		HH:MM:SS	(hr)	(psig)	(psig)	
*****						
824	12	13:43:00	6.6833	4729.23	5890.35	
825	12	13:44:00	6.7000	4738.65	5899.77	
826	12	13:45:00	6.7166	4741.34	5902.46	
827	12	13:46:00	6.7333	4746.72	5907.84	
828	12	13:47:00	6.7500	4753.45	5914.57	
829	12	13:48:00	6.7666	4761.52	5922.64	
830	12	13:49:00	6.7833	4769.59	5930.71	
831	12	13:50:00	6.8000	4774.97	5936.09	
832	12	13:51:00	6.8166	4781.70	5942.82	
833	12	13:52:00	6.8333	4791.12	5952.24	
834	12	13:53:00	6.8500	4793.81	5954.93	
835	12	13:54:00	6.8666	4805.92	5967.04	
836	12	13:55:00	6.8833	4815.34	5976.46	
837	12	13:56:00	6.9000	4822.07	5983.18	
838	12	13:57:00	6.9166	4828.79	5989.91	
839	12	13:58:00	6.9333	4835.52	5996.64	
840	12	13:59:00	6.9500	4842.25	6003.36	
841	12	14:00:00	6.9666	4851.67	6012.78	
842	12	14:01:00	6.9833	4853.01	6014.13	
843	12	14:02:00	7.0000	4861.08	6022.20	
844	12	14:03:00	7.0166	4874.54	6035.66	
846	12	14:05:00	7.0500	4882.61	6043.73	
847	12	14:06:00	7.0666	4887.99	6049.11	
848	12	14:07:00	7.0833	4894.72	6055.84	
849	12	14:08:00	7.1000	4901.45	6062.56	
850	12	14:09:00	7.1166	4905.48	6066.60	
851	12	14:10:00	7.1333	4910.86	6071.98	
852	12	14:11:00	7.1500	4916.25	6077.36	
853	12	14:12:00	7.1666	4922.97	6084.09	
854	12	14:13:00	7.1833	4932.39	6093.51	
855	12	14:14:00	7.2000	4933.74	6094.85	
856	12	14:15:00	7.2166	4945.85	6106.96	
857	12	14:16:00	7.2333	4948.54	6109.65	
858	12	14:17:00	7.2500	4951.23	6112.35	
859	12	14:18:00	7.2666	4963.34	6124.45	
860	12	14:19:00	7.2833	4967.37	6128.49	
861	12	14:20:00	7.3000	4972.76	6133.87	
862	12	14:21:00	7.3166	4978.14	6139.25	
863	12	14:22:00	7.3333	4983.52	6144.64	
864	12	14:23:00	7.3500	4988.90	6150.02	
865	12	14:24:00	7.3666	4994.28	6155.40	
866	12	14:25:00	7.3833	4995.63	6156.74	
867	12	14:26:00	7.4000	5002.35	6163.47	
868	12	14:27:00	7.4166	5007.74	6168.85	
869	12	14:28:00	7.4333	5011.77	6172.89	
870	12	14:29:00	7.4500	5019.85	6180.96	
871	12	14:30:00	7.4666	5026.57	6187.69	
872	12	14:31:00	7.4833	5027.92	6189.04	END OF 2.5 BBL/MIN
873	12	14:32:00	7.5000	4972.76	6133.87	CHANGE PUMP TRUCKS
874	12	14:33:00	7.5166	5114.03	6275.14	START 3.0 BBL/MIN
875	12	14:34:00	7.5333	5169.19	6330.31	

Geoservices Inc. Production

Client : MERIDIAN OIL  
Field Id. : KIVA

Survey Date : 07/11/87  
Well No. : 14-4 NAVAJO FED.

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ADDRESS	DAY	TIME	dT	dP	PRESSURE	COMMENTS
		HH:MM:SS	(hr)	(psig)	(psig)	

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876	12	14:35:00	7.5500	5190.72	6351.83	
877	12	14:36:00	7.5666	5208.21	6369.32	
878	12	14:37:00	7.5833	5206.86	6367.98	
879	12	14:38:00	7.6000	5217.63	6378.74	
880	12	14:39:00	7.6166	5225.70	6386.82	
881	12	14:40:00	7.6333	5236.46	6397.58	
882	12	14:41:00	7.6500	5237.81	6398.92	
883	12	14:42:00	7.6666	5236.46	6397.58	
884	12	14:43:00	7.6833	5241.84	6402.96	
885	12	14:44:00	7.7000	5245.88	6407.00	
886	12	14:45:00	7.7166	5247.23	6408.34	
887	12	14:46:00	7.7333	5264.72	6425.83	
888	12	14:47:00	7.7500	5268.75	6429.87	
889	12	14:48:00	7.7666	5275.48	6436.60	
890	12	14:49:00	7.7833	5278.17	6439.29	
891	12	14:50:00	7.8000	5288.93	6450.05	
892	12	14:51:00	7.8166	5287.59	6448.71	
893	12	14:52:00	7.8333	5294.32	6455.43	
894	12	14:53:00	7.8500	5292.97	6454.09	
895	12	14:54:00	7.8666	5297.01	6458.12	
896	12	14:55:00	7.8833	5294.32	6455.43	
897	12	14:56:00	7.9000	5297.01	6458.12	
898	12	14:57:00	7.9166	5299.70	6460.81	
899	12	14:58:00			6462.16	
900	12	14:59:00			6466.20	
901	12	15:00:00			6468.89	
902	12	15:01:00			6472.92	
903	12	15:02:00			6470.23	
904	12	15:03:00			6474.27	
905	12	15:04:00			6478.31	
906	12	15:05:00			6481.00	
908	12	15:07:00			6482.34	
909	12	15:08:00			6487.72	
910	12	15:09:00			6498.49	
911	12	15:10:00			6505.21	
912	12	15:11:00			6510.60	
913	12	15:12:00			6514.63	
914	12	15:13:00			6517.32	
915	12	15:14:00			6533.47	
916	12	15:15:00			6550.96	
917	12	15:16:00			6548.27	
918	12	15:17:00			6555.00	
919	12	15:18:00			6561.72	
921	12	15:20:00			6563.07	
922	12	15:21:00			6571.14	
923	12	15:22:00			6577.87	
924	12	15:23:00			6579.21	
925	12	15:24:00			6580.56	
926	12	15:25:00			6581.91	
927	12	15:26:00			6585.94	
928	12	15:27:00			6587.29	

Client : MERIDIAN OIL

Survey Date : 07/11/87

Field Id. : KIVA

Well No. : 14-4 NAVAJO FED.

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ADDRESS	DAY	TIME	dT	dP	PRESSURE	COMMENTS
		HH:MM:SS	(hr)	(psig)	(psig)	

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929	12	15:28:00			6589.98	
930	12	15:29:00			6588.63	
931	12	15:30:00			6595.36	
932	12	15:31:00			6591.32	
933	12	15:32:00			6594.01	
934	12	15:33:00			6600.74	
935	12	15:34:00			6598.05	
936	12	15:35:00			6606.12	
937	12	15:36:00			6604.78	
938	12	15:37:00			6608.81	
939	12	15:38:00			6599.40	
940	12	15:39:00			6608.81	
941	12	15:40:00			6614.19	
942	12	15:41:00			6612.85	
943	12	15:42:00			6608.81	
945	12	15:44:00			6603.43	
946	12	15:45:00			6606.12	
947	12	15:46:00			6610.16	
948	12	15:47:00			6608.81	
949	12	15:48:00			6618.23	
950	12	15:49:00			6623.61	
951	12	15:50:00			6624.96	
952	12	15:51:00			6635.72	
953	12	15:52:00			6637.07	
954	12	15:53:00			6647.83	
955	12	15:54:00			6633.03	
956	12	15:55:00			6638.41	
957	12	15:56:00			6631.69	
958	12	15:57:00			6626.30	
959	12	15:58:00			6631.69	
960	12	15:59:00			6627.65	
961	12	16:00:00			6634.38	
962	12	16:01:00			6626.30	END OF 3.0 BBL/MIN
963	12	16:02:00			6739.32	START 3.5 BBL/MIN
964	12	16:03:00			6717.79	
965	12	16:04:00			6686.85	
966	12	16:05:00			6709.72	
967	12	16:06:00			6719.14	
969	12	16:08:00			6716.45	
970	12	16:09:00			6727.21	
971	12	16:10:00			6725.87	
972	12	16:11:00			6724.52	
973	12	16:12:00			6735.28	
974	12	16:13:00			6740.67	
975	12	16:14:00			6742.01	
976	12	16:15:00			6750.08	
977	12	16:16:00			6754.12	
978	12	16:17:00			6758.16	
979	12	16:18:00			6764.88	
980	12	16:19:00			6763.54	
981	12	16:20:00			6768.92	

Client : MERIDIAN OIL

Survey Date : 07/11/87

Field Id. : KIVA

Well No. : 14-4 NAVAJO FED.

\*\*\*\*\*

ADDRESS	DAY	TIME	dT	dP	PRESSURE	COMMENTS
		HH:MM:SS	(hr)	(psig)	(psig)	

\*\*\*\*\*

983	12	16:22:00			6772.96	
984	12	16:23:00			6781.03	
986	12	16:25:00			6779.68	
987	12	16:26:00			6786.41	
988	12	16:27:00			6793.14	
989	12	16:28:00			6797.18	END INJECTION TEST
990	12	16:29:00			6674.74	RAN OUT OF WATER1015
991	12	16:30:00			6614.19	
992	12	16:31:00			6587.29	
993	12	16:32:00			6577.87	
994	12	16:33:00			6470.23	
995	12	16:34:00			6086.78	
996	12	16:35:00			5882.27	
997	12	16:36:00			5727.55	
998	12	16:37:00			5594.35	
999	12	16:38:00			5478.64	
1000	12	16:39:00			5362.93	
1001	12	16:40:00			5224.35	
1002	12	16:41:00			5072.32	
1003	12	16:42:00			4927.01	
1004	12	16:43:00			4791.12	
1005	12	16:44:00			4481.67	
1006	12	16:45:00			4406.32	
1007	12	16:46:00			4328.29	
1008	12	16:47:00			4239.49	
1009	12	16:48:00			4113.02	
1010	12	16:49:00			3986.55	
1011	12	16:50:00			3877.57	
1012	12	16:51:00			3734.95	
1013	12	16:52:00			3573.50	
1014	12	16:53:00			3416.08	
1015	12	16:54:00			3258.66	GAUGES OFF BOTTOM
1016	12	16:55:00			3148.34	
1017	12	16:56:00			3093.17	
1018	12	16:57:00			2959.97	
1019	12	16:58:00			2813.32	
1020	12	16:59:00			2668.01	
1021	12	17:00:00			2526.74	
1022	12	17:01:00			2388.16	
1023	12	17:02:00			2252.27	
1024	12	17:03:00			2116.38	
1025	12	17:04:00			1980.49	
1026	12	17:05:00			1844.60	
1027	12	17:06:00			1708.71	
1028	12	17:07:00			1571.48	
1029	12	17:08:00			1434.24	
1030	12	17:09:00			1295.66	
1031	12	17:10:00			1155.74	
1032	12	17:11:00			1021.19	
1033	12	17:12:00			892.03	
1034	12	17:13:00			770.94	



Geoservices Inc. Production

Client : MERIDIAN OIL  
Field Id. : KIVA

Survey Date : 07/11/87  
Well No. : 14-4 NAVAJO FED.

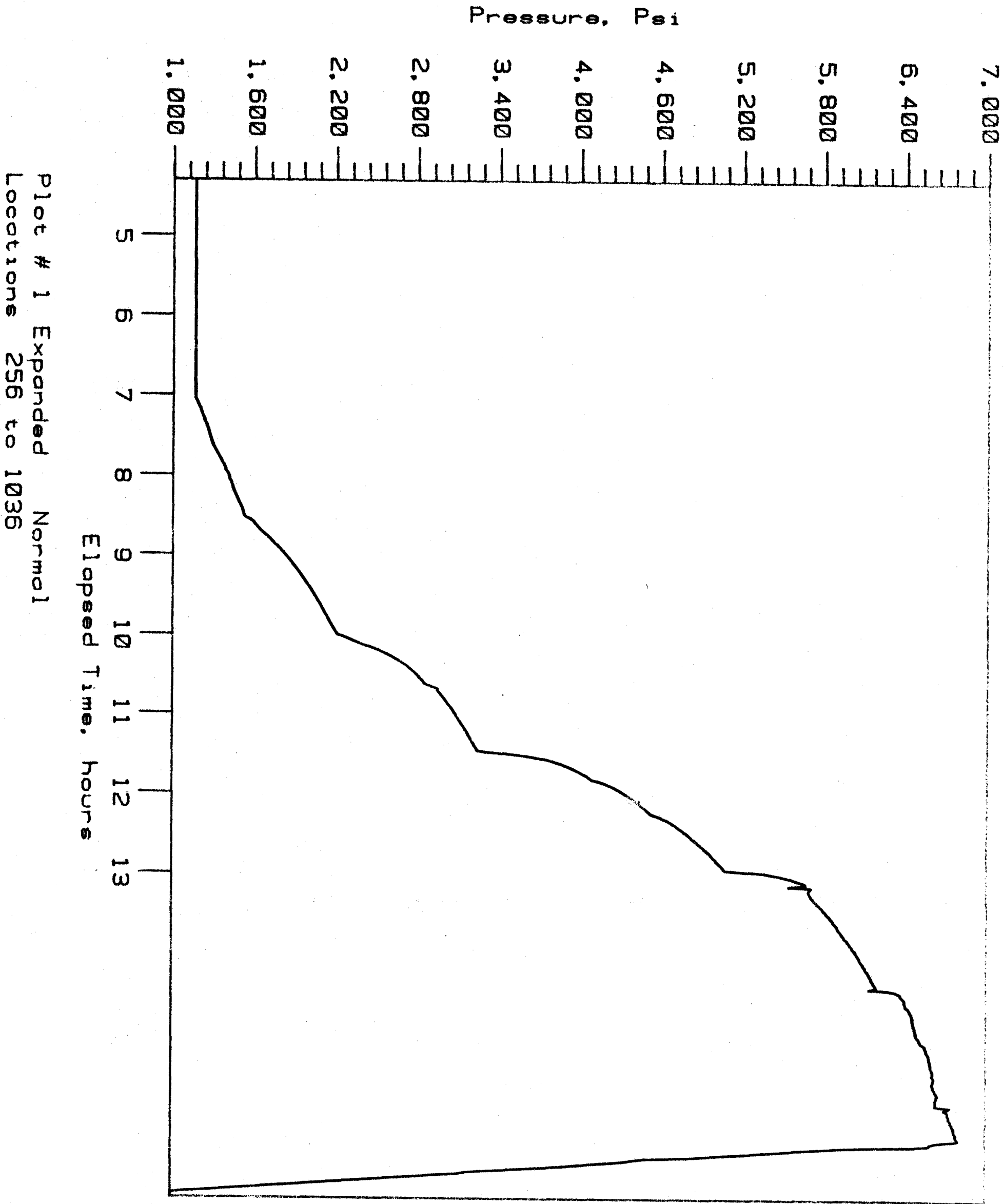
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ADDRESS	DAY	TIME	dT	dP	PRESSURE	COMMENTS
		HH:MM:SS	(hr)	(psig)	(psig)	

\*\*\*\*\*

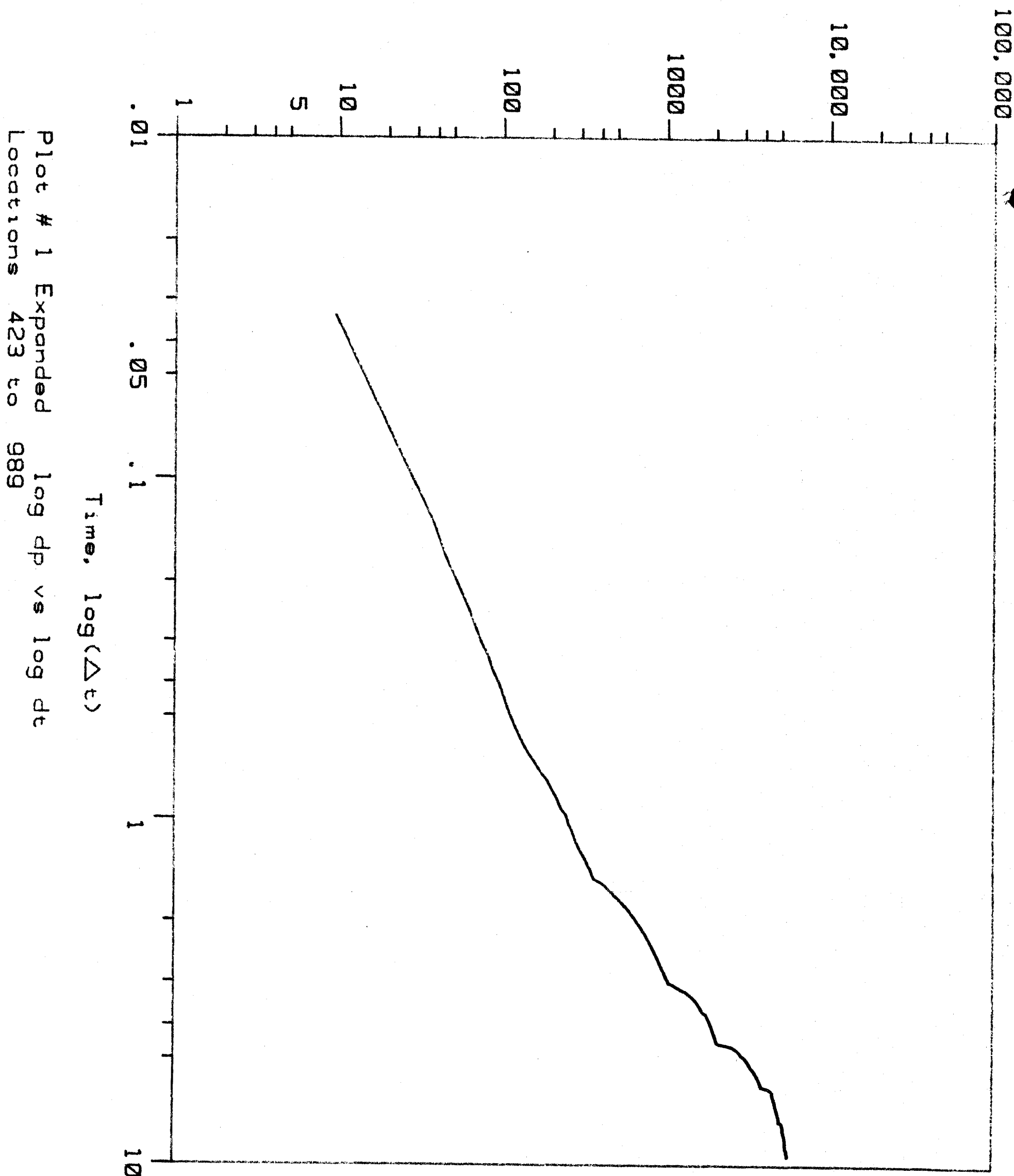
1035	12	17:14:00			652.54	
1036	12	17:15:00			554.32	
1037	12	17:16:00			477.63	
1038	12	17:17:00			410.36	
1039	12	17:18:00			348.47	
1040	12	17:19:00			287.93	
1041	12	17:20:00			236.80	
1042	12	17:21:00			184.33	
1043	12	17:22:00			131.85	GAUGES IN LUBRICATOR
1044	12	17:23:00			67.27	BLEED OFF LUBRICATOR
1045	12	17:24:00			4.04	
1046	12	17:25:00			1.35	END OF SURVEY

Geoservices Inc. Production	
Client: MERIDIAN OIL	Calibration Date 05/23/87
Well : 14-4 NAVAJO FED.	Calibration Number JL#1
Field : KIVA	Calibration Range 0-8000 psi
Date : 07/11/87	Calibration Temp. 70 C
Reader: DataView	Corrected Data $CD = (M * UD) + I$
Disk : D#042	M = 1.34544
DEMETER Pressure Gauge #83	I = -566.431



Geoservices Inc. Production	
Client: MERIDIAN OIL	Calibration Date 05/23/87
Well : 14-4 NAVAJO FED.	Calibration Number JL#1
Field : KIVA	Calibration Range 0-8000 psi
Date : 07/11/87	Calibration Temp. 70 C
Reader: DataView	Corrected Data $CD = (M * UD) + I$
Disk : D#042	M = 1.34544
DEMETER Pressure Gauge #83	I = -566.431

# Log delta Pressure



TEMPORARY

RECEIVED

# FILING FOR WATER IN THE STATE OF UTAH

AUG 01 1988

JUL 27 1988

Rec. by

Fee Rec.

Receipt #

Microfilmed

Roll #

## APPLICATION TO APPROPRIATE WATER SALT LAKE TEMPORARY

For the purpose of acquiring the right to use a portion of the unappropriated water of the State of Utah, application is hereby made to the State Engineer, based upon the following showing of facts, submitted in accordance with the requirements of the Laws of Utah.

\* WATER RIGHT NO. 09 1591

\* APPLICATION NO. A T63427

1. \*PRIORITY OF RIGHT: July 27, 1988

\* FILING DATE: July 27, 1988

### 2. OWNER INFORMATION

Name(s): MERIDIAN OIL INC.

\* Interest: 100 %

Address: P. O. Box 1855

City: Billings

State: MT

Zip Code: 59103

Is the land owned by the applicant? Yes No ☒ X

(If "No", please explain in EXPLANATORY section.)

3. QUANTITY OF WATER: cfs and/or 350 ac-ft

4. SOURCE: 42-9 Navajo-Federal \* DRAINAGE:

which is tributary to

which is tributary to

POINT(S) OF DIVERSION: S. 1850 ft. & W. 1140 ft. NE Cor

COUNTY: San Juan

Location: SENE (1850' FNL - 1140' FEL) Section 9, T39S, R25E

S. 1850 ft. & W. 1140 ft. from NE Cor. Sec. 9, T39S, R25E, SLB&M

(3 miles NE of Hatch Trading Post)

Cajon Mesa Quad

Description of Diverting Works: 9-5/8" casing set @ 3285'

\* COMMON DESCRIPTION:

### 5. POINT(S) OF REDIVERSION

The water will be rediverted from N/A at a point:

Description of Rediverting Works:

### 6. POINT(S) OF RETURN

The amount of water consumed will be cfs or 350 ac-ft

The amount of water returned will be cfs or 0 ac-ft

The water will be returned to the natural stream/source at a point(s): N/A

### 7. STORAGE

Reservoir Name: N/A

Storage Period: from to

Capacity: ac-ft. Inundated Area: acres

Height of dam: feet

Legal description of inundated area by 40 acre tract(s):

\* These items are to be completed by the Division of Water Rights

TEMPORARY

Appropriate

8. List any other water rights which will supplement this application N/A

9. NATURE AND PERIOD OF USE

Irrigation: From \_\_\_\_\_ to \_\_\_\_\_  
Stockwatering: From \_\_\_\_\_ to \_\_\_\_\_  
Domestic: From \_\_\_\_\_ to \_\_\_\_\_  
Municipal: From \_\_\_\_\_ to \_\_\_\_\_  
Mining: From \_\_\_\_\_ to \_\_\_\_\_  
Power: From \_\_\_\_\_ to \_\_\_\_\_  
Other: Waterflood From July 31, 1988 to July 31, 1989

10. PURPOSE AND EXTENT OF USE

Irrigation: \_\_\_\_\_ acres. Sole supply of \_\_\_\_\_ acres.  
Stockwatering (number and kind): \_\_\_\_\_  
Domestic: \_\_\_\_\_ Families and/or \_\_\_\_\_ Persons  
Municipal (name): \_\_\_\_\_  
Mining: \_\_\_\_\_ Mining District in the \_\_\_\_\_ Mine  
Ores mined: \_\_\_\_\_  
Power: Plant name: \_\_\_\_\_ Type: \_\_\_\_\_ Capacity: \_\_\_\_\_  
Other (describe): Secondary Recovery - oil and gas, water source for Kiva Waterflood

11. PLACE OF USE

Legal description of place of use by 40 acre tract(s):  
21-9 Navajo-Federal, NENW (330' FNL - 2510' FWL) Section 9, T39S-R25E 43-037-31267(W)h  
14-4 Navajo-Federal, SWSW (1150' FSL - 1110' FWL) Section 4, T39S, R25E 43-037-31321(W)h  
43-5 Navajo-Federal, NWSW (2420' FSL - 105' FWL) Section 5, T39S, R25E 43-037-31317(W)h  
12-4 Navajo-Federal, SWNW (2260' FNL - 440' FWL) Section 4, T39S, R25E 43-037-31395(W)h

12. EXPLANATORY

The following is set forth to define more clearly the full purpose of this application. (Use additional pages of same size if necessary): Landowner - Federal Lease #U-52333. Water production from the 42-9 is being utilized for the Kiva Waterflood. Two sands, the Cutler and Wingate, have been completed and pump tested at 2150 BWPD and 4000 BWPD (est) respective

\*\*\*\*\*  
The applicant(s) hereby acknowledges that he/she/they are a citizen(s) of the United States of America or intends to become such a citizen(s). The quantity of water sought to be appropriated is limited to that which can be beneficially used for the purposes herein described. The undersigned hereby acknowledges that even though he/she/they may have been assisted in the preparation of the above-numbered application through the courtesy of the employees of the Division of Water Rights, all responsibility for the accuracy of the information contained herein, at the time of filing, rests with the applicant(s).

R. E. Schuyler  
Signature of Applicant(s)  
R. E. Schuyler

TEMPORARY

STATE ENGINEER'S ENDORSEMENT

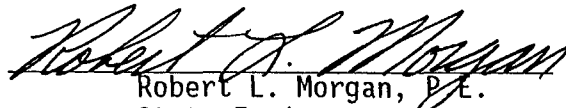
WATER RIGHT NUMBER: 09 - 1591

APPLICATION NO. T63427

1. July 27, 1988            Application received by MP.
  2. July 28, 1988            Application designated for APPROVAL by MP and KLJ.
  3. Comments:
- 
- 

Conditions:

This application is hereby APPROVED, dated September 2, 1988, subject to prior rights and this application will expire on September 2, 1989.

  
Robert L. Morgan, P.E.  
State Engineer

# MERIDIAN OIL

July 29, 1987

Mr. Gil Hunt, UIC Manager  
State of Utah  
Natural Resources, Oil, Gas, and Mining  
355 W. North Temple  
3 Triad Center, Ste. 350  
Salt Lake City, UT 84108-1203

**RECEIVED**  
JUL 31 1987

DIVISION OF  
OIL, GAS & MINING

Re: Kiva Field Waterflood,  
Injection Step Rate Tests  
21-9 Navajo-Federal Injection Well  
14-4 Navajo-Federal Injection Well

Dear Mr. Hunt:

In reference to Meridian Oil Inc.'s petition to inject water in the subject field (filed April 23, 1987) and the Utah State Oil and Gas Conservation rule 502(b)(9), enclosed please find the data regarding the injection well step rate tests for the Kiva Field waterflood. Attached are both the service company's summary reports for the tests and Meridian's interpretation of the test results.

These tests were run to determine the maximum operating surface pressure for the waterflood. The graph of bottom hole pressure versus injection rate indicates that both the 21-9 Navajo-Federal and 14-4 Navajo-Federal wells fractured at a pressure gradient of 1.13 psi/ft. With an injection fluid gradient of .41 psi/ft, the resulting fracture pressures on surface are 3933 psi for the 21-9 and 4086 psi for the 14-4. Meridian Oil will operate the waterflood safely below these pressures and will not exceed 3750 psi surface pressure as previously set by the State of Utah.

Meridian's third injection well, the 43-5 Navajo-Federal is currently waiting for a completion rig. Assuming a fracture pressure gradient of 1.13 psi/ft, which has been determined in 3 wells at Kiva, 42-5 (December, 1986), 21-9, and 14-4, the resulting fracture pressure on surface for the 43-5 well should be:

$$(5593' * 1.13 \text{ psi/ft}) - (5593' * .41 \text{ psi/ft}) = \underline{4027 \text{ psi.}}$$

To avoid exposing the reservoir to pressures above the fracture pressure a fourth time, Meridian Oil requests the 43-5 Navajo-Federal well not be required to conduct an injection well step rate test as a fracture pressure at Kiva has already been established at 1.13 psi/ft.

If there are any questions regarding this project, please give me a call (406/256-4073).

Sincerely,

*Daniel Sodersten*  
Daniel A. Sodersten  
Petroleum Engineer

DAS/ch

Attach.

cc: Lynn Jackson, BLM, MOAB District w/a

Ron Firth, State of Utah Oil, Gas, and Mining wo/a

JBF

TCL

Well File

2425P



21-9 Navajo FederalInjection Step-Rate Test

7/13/87

Design: .5 BPM Increments. Flow each rate for 1-1/2 hours

Plot stabilized rate vs last measured pressure

Bomb Depth: 5479'

KB: 4826'

<u>Time</u>		<u>Rate</u>		<u>Pressure</u>		<u>Fluid Gradient (PSI/Ft)</u>
		<u>(BPM)</u>	<u>(BPD)</u>	<u>Surface (PSI)</u>	<u>Bottom (PSI)</u>	
To	5:57	0	0	0	1694	
5:57 -	7:25 (88 min)	1.15	1653	1210	3524	.422
7:25 -	8:55 (90 min)	1.60	2304	2440	4768	.425
8:55 -	10:24 (89 min)	2.00	2880	3550	5719	.396
10:24 -	11:55 (91 min)	2.74	3946	4040	6263	.406
11:55 -	13:24 (89 min)	3.13	4507	4060	6305	.410

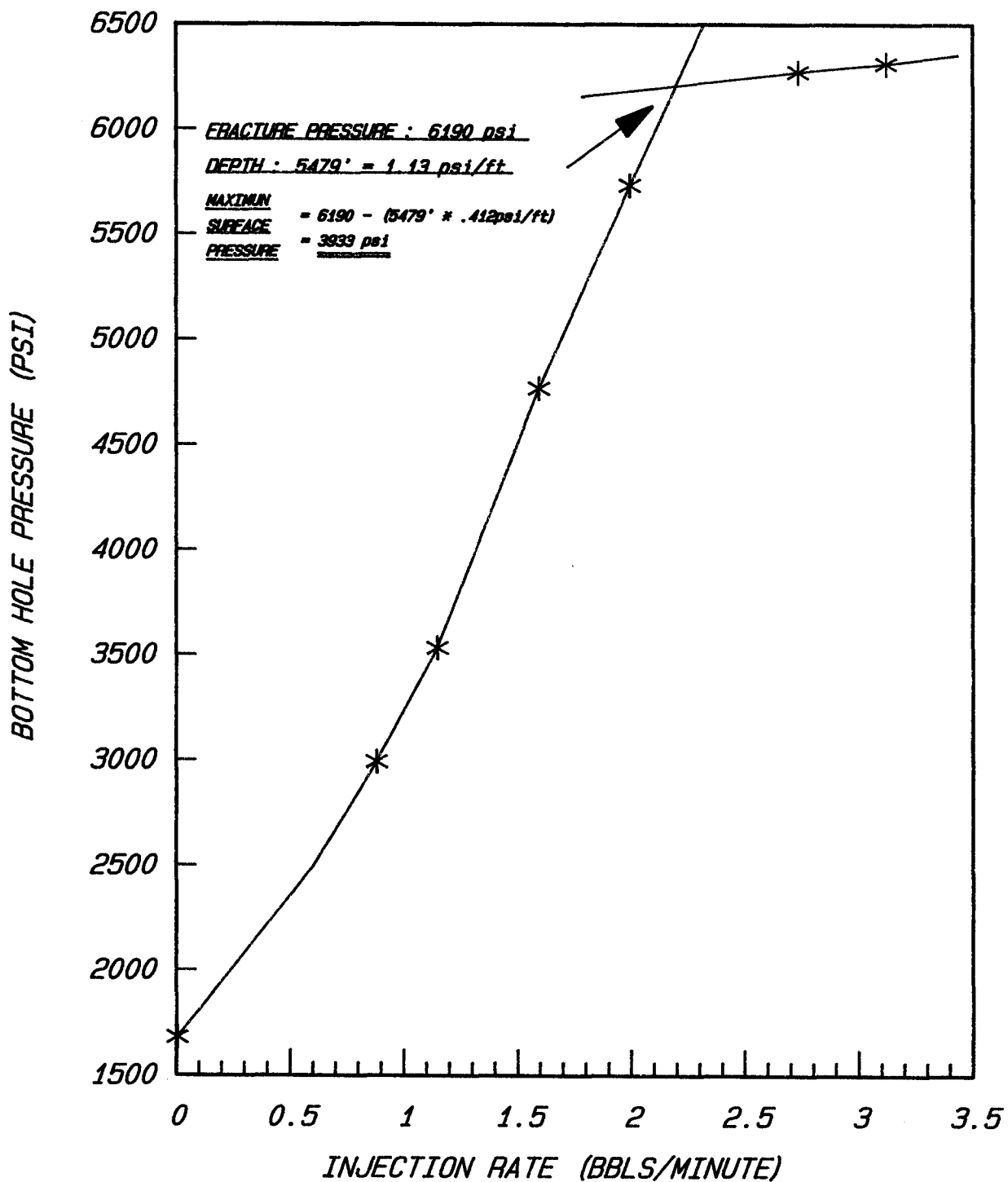
Plot Bottom Hole Pressure vs Injection RateFracture Pressure: 6190 psi @ - 653 ss 1.13 psi/ftSurface Pressure: 6190 psi - (5479 x .412 psi/ft) = 3933 psi

2421P

# 21-9 NAVAJO-FEDERAL INJECTION STEP RATE TEST

## KIVA FIELD WATERFLOOD

### BOTTOM HOLE PRESSURE VS RATE



14-4 Navajo Federal

Injection Step-Rate Test

7/12/87

Design: .5 BPM Increments. Flow each rate for 1-1/2 hours

Plot stabilized rate vs last measured pressure

Bomb Depth: 5644'

KB: 4880'

Time	Rate		Pressure		Fluid Gradient (PSI/Ft)
	(BPM)	(BPD)	Surface (PSI)	Bottom (PSI)	
To 7:02	0	0	0	1161	
7:02 - 8:32 (90 min)	.51	734	0	1524	
8:32 - 10:02 (90 min)	1.01	1454	0	2219	
10:02 - 11:31 (91 min)	1.47	2117	820	3241	.429
11:31 - 13:01 (91 min)	2.08	2995	2710	5071	.418
13:01 - 14:31 (90 min)	2.50	3600	3880	6189	.409
14:31 - 16:01 (90 min)	3.02	4349	4430	6626	.389
16:01 - 16:28 (27 min)	3.35	4824	4700	6797	.372

Plot Bottom Hole Pressure vs Injection Rate

Fracture Pressure: 6400 psi @ - 764 ss

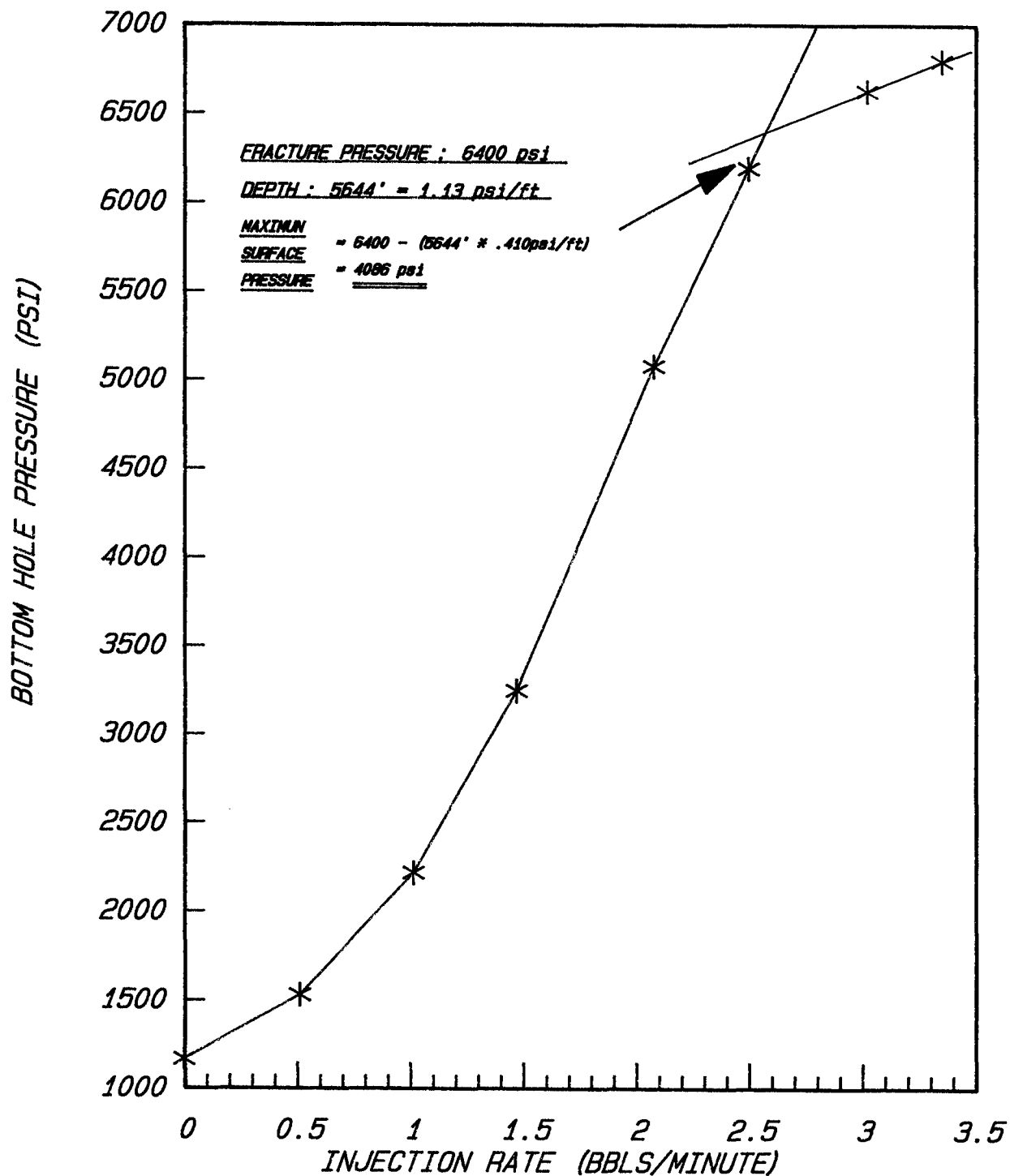
Surface Pressure: 6400 psi - (5644 x .410 psi/ft) = 4086 psi

2421P

# 14-4 NAVAJO-FEDERAL INJECTION STEP RATE TEST

## KIVA FIELD WATERFLOOD

### BOTTOM HOLE PRESSURE VS RATE





TIME	PRESSURE	TOTAL FLUID	RATE	REMARKS
07:00	850	0	0.5	Start Pumping H <sub>2</sub> O
07:15	580	7	0.5	Pressure reading
07:30	150	145	0.55	"
07:37	0	18	0.57	1 tank pumped went to 0 @ 0733 on pressure
08:12	0 (-10)	36	0.51	2 tank pumped 0.5 BPM rate-average
* 08:30	0 (-10)	463		Increase rate-pressure still 0 46 Bbls this test
08:37	0 (-10)	54	1.1	Swap third tank
08:55	0 (-10)	72	1.13	Swap tanks
09:13	0 (-10)	90	1.0	"
09:31	0 (-10)	108	1.12	"
09:41	0 (-10)	126	1.03	"
* 10:00	0 (-10)	137	1.60	Start rate # 3 90 Bbls this stage 1 BPM average
10:04	0	144	1.5	Swap tanks
10:10	90	154	1.5	Picking up pressure
10:16	220	162	1.5	Swap tanks
10:29	380	180	1.5	"
10:41	560	198	1.6	"
10:53	620	216	1.5	"
11:05	700	234	1.5	"
11:17	770	252	1.5	"
11:29	820	270	1.5	Swap tanks
* 11:30	820	271	2.0	Start rate #4 134 Bbls 1.49 av.
11:32	1160	273	2.0	Pressure reading
11:39	1520	288	2.0	"
11:48	1700	306	2.0	"
11:57	1920	324	2.0	"
12:06	2060	342	2.0	"
12:15	2150	360	2.0	"
12:24	2280	374	2.0	"
12:30	2400	390	2.1	"
12:32	2440		2.0	"
12:39	2510	414	2.0	"
12:45	2580	426	2.0	"
12:49	2620	432	2.0	"
* 13:00	2710	458	2.5	Used 188 or 2.09 BPM Av. Increase rate Start rate #6 in PS to 2890
13:29	3500	550	2.4	Pressure reading
14:02	3700	620	2.4	"
14:12	3780	655	2.4	"
14:21	3840	679	2.4	"
14:29	3880		2.4	"
* 14:30	4100	683	3.0	" Change rates 225 used
14:47	4250	736	2.9	Pressure Reading
15:04	4280	786	2.9	"
15:10	4300	804	2.9	"
15:15	4380	820	3.0	"
15:26	4410	855	3.0	"
15:40	4400	894	2.9	"
15:45	4400	912	2.9	"
15:50	4430	924	2.9	"
16:00	4630	984	3.3	Increase Rate
16:10	4650	984	3.3	Pressure Reading
16:20	4690	1023	3.3	"
16:25	4700	1041	3.4	"
16:31		1059	2.5	Shut down out of water 3.35 av.r 3800 ISIP

\*Step Increase



TIME	PRESSURE	TOTAL FLUID	RATE	REMARKS
05:00				Rig up and prime up
* 06:00	(Vacu)	0	1	Start
06:18	0	18	1	Swap tanks
06:24	130	24	1.1	Caught pressure
06:34	310	36	1.05	Pressure Reading
06:44	470	46	1.1	"
07:00	720	64	1.1	"
07:18	1010	86	1.1	"
07:28	1140	100	1.1	Pressure reading
* 07:30	1210	101	1.5	Increase rate, start test #2
				average rate 1.1 stage #1
07:42	1510	118	1.5	Pressure reading
07:51	1750	132	1.6	"
08:10	1940	163	1.6	"
08:20	1980	179	1.5	"
08:30	2050	195	1.5	"
08:40	2140	210	1.5	"
08:50	2230	226	1.6	"
08:59	2340		1.5	"
* 09:00	2440	245	2.0	Increase rate start rate 3,
				Average 1.61 stage 2
09:10	2790	265	2.0	Pressure reading
09:20	2900	283	1.9	"
09:30	3000	303	1.9	"
09:40	3080	323	2.0	"
09:50	3140	343	2.0	"
10:00	3200	363	1.9	"
10:10	3240	383	2.0	"
10:20	3280	403	2.0	Pressure reading
10:29	3320		2.0	"
* 10:30	3550	423	2.5	Increase rate 150 BBls pumped
				2.0 average rate stage 3
10:40	3780	450	2.6	Pressure reading
10:50	3830	476	2.6	"
11:00	3860	506	2.7	"
11:10	3890	534	2.7	"
11:20	3890	562	2.7	"
11:30	3880	590	2.6	"
11:40	3890	617	2.6	"
11:50	3930	645	2.6	"
11:59	3960		2.6	"
* 12:00	4040	642	3.0	Change rate average rate w.76 BPM
12:10	4090	703	3.1	Pressure reading
12:20	4050	733	3.0	"
12:30	4060	765	2.9	"
12:40	4090	796	3.0	"
12:50	4090	829	3.1	"
13:00	4100	860	3.1	"
13:10	4080	891	3.0	"
13:20	4070	921	3.0	"
13:30	4060	951	2.9	" 282 this stage on 3.13 BPM

\* Step Rate Increase





STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Norman H. Bangerter, Governor  
Dee C. Hansen, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

August 12, 1987

Mr. Daniel A. Sodersten  
Meridian Oil, Incorporated  
175 N. 27th Street  
P.O. Box 1855  
Billings, Montana 59103

Dear Mr. Sodersten:

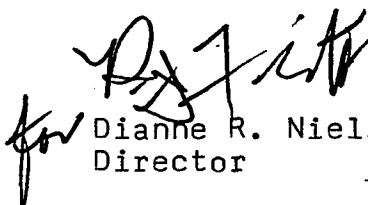
Re: Kiva Field Waterflood, Step Rate Tests and Maximum Injection Pressure

The Division has reviewed the information Meridian has submitted regarding the step rate testing conducted on the Class II injection wells in the Kiva Field. The Division is in agreement that it is not necessary to conduct a third test on the No. 43-5 well.

The Division recommends that the injection pressure for these wells not exceed 90% of the determined fracture pressure or approximately 3540 psi. which allows for a 10% safety margin.

If you have questions or wish to discuss this matter please call Gil Hunt at (801)538-5340.

Best regards,

  
for Dianne R. Nielson  
Director

GLH/mfp  
0134/97

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE

(See other instructions on reverse side)

Form approved. *St. Utah*  
Budget Bureau No. 1004-0137  
Expires August 31, 1985

13

WELL COMPLETION OR RECOMPLETION REPORT AND LOG \*

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☐ Other WATER INJECTION

b. TYPE OF COMPLETION:

NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. CENVR. ☐ Other \_\_\_\_\_

2. NAME OF OPERATOR

MERIDIAN OIL INC.

3. ADDRESS OF OPERATOR

P. O. Box 1855, Billings, MT 59103

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)

At surface

SWSW (1150' FSL - 1110' FWL)

At top prod. interval reported below

Same

At total depth

Same

RECEIVED

AUG 20 1987

DIVISION OF OIL  
GAS & MINING

5. LEASE DESIGNATION AND SERIAL NO.

U-52333

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

N/A 082611

7. UNIT AGREEMENT NAME

N/A

8. FARM OR LEASE NAME

Navajo-Federal

9. WELL NO.

14-4

10. FIELD AND POOL, OR WILDCAT

Kiva (U. Ismay)

11. SEC. T., R., M., OR BLOCK AND SURVEY OR AREA

Section 4-39S-25E

12. COUNTY OR PARISH

San Juan

13. STATE

Utah

15. DATE SPUDDED

6-1-87

16. DATE T.D. REACHED

6-15-87

17. DATE COMPL. (Ready to prod.)

7-22-87

18. ELEVATIONS (OF, RKB, RT, GR, ETC.)\*

4868' GL

19. ELEV. CASINGHEAD

4881' KB

20. TOTAL DEPTH, MD & TVD

5849'

21. PLUG BACK T.D., MD & TVD

5761'

22. IF MULTIPLE COMPL. HOW MANY\*

N/A

23. INTERVALS DRILLED BY

ROTARY TOOLS

X

CABLE TOOLS

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)\*

5556' - 5614' (U. Ismay)

25. WAS DIRECTIONAL SURVEY MADE

No

26. TYPE ELECTRIC AND OTHER LOGS RUN

CBL/VDL/GR/CCL, FDC/CNL, DLL/MSFL, BHC/Sonic

27. WAS WELL CORED

No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	54.5#	80'	17-1/2"	90 SX	None
9-5/8"	32.3 & 40#	3300'	12-1/4"	1215 SX	None
5-1/2"	17#	5849'	8-3/4"	669 SX	None

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
N/A					2-7/8	5396'	5402'

31. PERFORATION RECORD (Interval, size and number)

5605' - 5614' w/4 jspf  
5582' - 5588' w/4 jspf  
5590' - 5592' w/4 jspf  
5569' - 5577' w/4 jspf  
5556' - 5566' w/4 jspf

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
5605'-5614'	900 gal 15% Hcl
5582'-5592'	800 gal 15% Hcl
5569'-5577'	800 gal 15% Hcl
5556'-5566'	1000 gal 15% Hcl

33.\* PRODUCTION

DATE FIRST PRODUCTION: N/A  
PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump): Water Injection  
WELL STATUS (Producing or shut-in): Water Injection Well

DATE OF TEST: 7-12-87  
HOURS TESTED: 24  
CHOKE SIZE: N/A  
PROD'N. FOR TEST PERIOD: N/A  
OIL—BBL.: N/A  
GAS—MCF.: N/A  
WATER—BBL.: 852  
GAS-OIL RATIO: N/A

Inj. FLOW. TUBING PRESS.: 2660  
CASING PRESSURE: 0  
CALCULATED 24-HOUR RATE: N/A  
OIL—BBL.: N/A  
GAS—MCF.: N/A  
WATER—BBL.: 852  
OIL GRAVITY-API (CORR.): N/A

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

TEST WITNESSED BY

Dan Sodersten

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED

*D. P. Harris*

TITLE Reg. Drilling Engineer

DATE 8/18/87

\*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries):

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
N/A			N/A

38. GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
Entrada	667'	
Navajo	856'	
Chinle	1560'	
Cutler	2714'	
Hermosa	4510'	
U. Ismay	5488'	
Top Ø	5555'	
"A" Shale	5615'	
L. Ismay	5650'	
Gothic	5702'	
Desert Creek	5726'	
Chimney Rock	5794'	
Akah	5816'	



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

Norman H. Bangerter  
Governor

Dee C. Hansen  
Executive Director

Dianne R. Nielson, Ph.D.  
Division Director

355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
801-538-5340

August 11, 1992

Meridian Oil Inc.  
5613 DTC Parkway  
Englewood, Colorado 80111

Gentlemen:

Re: Pressure Test for Mechanical Integrity, Class II Injection Wells in the Kiva and Kachina Units, San Juan County, Utah

The Underground Injection Control Program which the Division of Oil, Gas and Mining (DOGM) administers in Utah, requires that all Class II injection wells demonstrate mechanical integrity. It has been past policy of the Division to require pressure testing of all Class II salt water disposal wells and other injection wells not reporting monthly annulus pressures in accordance with rule R649-5-5.3 of the Oil and Gas Conservation General Rules. This rule requires that the casing-tubing annulus above the packer be pressure tested at a pressure equal to the maximum authorized injection pressure or 1,000 psi, whichever is lesser, provided that no test pressure is less than 300 psi. This test shall be performed at least every five year period beginning October, 1982. Our records indicate the above referenced wells are due for testing for the second five year period. Attached is a list of wells which need to be tested according to our records. Please make arrangements and ready the wells for testing during the week of September 21, 1992 as outlined below:

1. Operator must furnish connections, and accurate pressure gauges, hot oil truck (or other means of pressuring annulus), as well as personnel to assist in opening valves etc.
2. The casing-tubing annulus shall be filled prior to the test date to expedite testing, as each well will be required to hold pressure for a minimum of 15 minutes.
3. If mechanical difficulties or workover operations make it impossible for the wells to be tested on this date the tests may be rescheduled.

Page 2  
Pressure Test  
August 11, 1992

4. Company personnel should meet DOGM representatives at the field office or other location as negotiated.
5. All bradenhead valves with exception of the tubing on the injection wells must be shut in 24 hours prior to testing.

Please contact Mr. Dan Jarvis at (801)538-5340 to arrange a meeting time and place or negotiate a different date if this one is unacceptable.

Sincerely,



Gil Hunt  
UIC Program Manager

Idc  
Attachment  
WOI52

Utah Division of Oil, Gas, and Mining  
Casing - ~~Bradford~~ <sup>Pressure</sup> Head Test

Operator: MERIDIAN OIL COMPANY

Field/Unit: KIVA

Well: 14-4 NAV.FEDERAL

Township: 39S Range: 25E Sect: 4

API: 43-037-31321

Welltype: INJW Max Pressure: 3540

Lease type: FEDERAL

Surface Owner: BLM

Test Date: 9/23/92

8:45

CASING STRING	SIZE	SET AT	PRESSURE	OBSERVATIONS
---------------	------	--------	----------	--------------

Surface:	133/8	80		
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Intermediate:	9 5/8	3300		
---------------	-------	------	--	--

Production:	5 1/2	5849	start 0	End 0
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Other:		0		
--------	--	---	--	--

Tubing:	2 7/8			
---------	-------	--	--	--

2750 PSI

Packer:		5402		
---------	--	------	--	--

Recommendations:

D. JARVIS ) DOGM  
Gil Hunt )

BOB Vialpando - Meridian

MATE Inc. Hot Oil Service

Pressured to 1000 PSI  
held 15 min - no pressure loss

Passed MIT

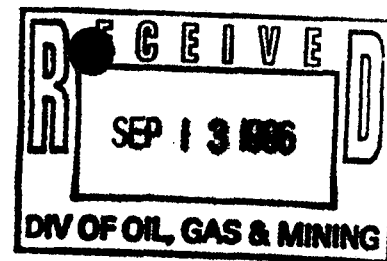
D. Jarvis

STATE OF UTAH  
INVENTORY OF INJECTION WELLS

OPERATOR	API NO.	WELL	TNS	RGE	SE	WELLTYPE	INDIAN COUNT
*****	*****	*****	***	***	**	*****	*****
EQUITABLE RE	43-013-31370	FEDERAL 13-5	09S	17E	5	INJW	Y
EQUITABLE RE	43-013-31195	ALLEN FEDERA	09S	17E	6	INJW	N
EQUITABLE RE	43-013-31492	11-7J	09S	17E	7	INJW	Y
EQUITABLE RE	43-013-31405	31-7J	09S	17E	7	INJW	Y
EQUITABLE RE	43-047-20252	E. RED WASH	08S	25E	5	INJW	N
EQUITABLE RE	43-047-20261	ERW 4-6	08S	25E	6	INJW	Y
EQUITABLE RE	43-047-32346	42-6X	08S	25E	6	INJW	N
EQUITABLE RE	43-047-20245	AMERADA GUIN	08S	25E	7	INJW	Y
GERRITY OIL	43-047-30566	FEDERAL 14-1	09S	24E	10	INJD	Y
GIANT EXPLOR	43-037-15042	GOTHIC MESA	41S	23E	16	INJD	Y
GIANT EXPLOR	43-037-31095	CAVE CANYON	38S	24E	3	INJW	N
GIANT EXPLOR	43-037-20292	SENTINEL PEA	41S	26E	27	INJD	Y
GIANT EXPLOR	43-037-16452	9-24	41S	23E	9	INJI	Y
HAY HOT OIL	43-037-30521	MCCRACKEN PT	40S	23E	19	INSD	N
HAY HOT OIL	43-037-30575	FED. 23-32	40S	22E	23	INJI	N
HELD BY PROD	43-013-15122	UTE #1-A	03S	06W	18	INJD	Y
INLAND PRODU	43-013-30843	MONUMENT BUT	08S	16E	34	INJW	Y
INLAND PRODU	43-013-30693	FEDERAL 3-33	08S	16E	33	INJW	N
INLAND PRODU	43-013-30686	FEDERAL 5-35	08S	16E	35	INJW	N
INLAND PRODU	43-013-30745	MONUMENT BUT	08S	16E	35	INJW	N
INLAND PRODU	43-013-30608	MONUMENT BUT	08S	16E	35	INJW	N
INLAND PRODU	43-013-30606	MONUMENT BUT	08S	16E	35	INJW	N
INLAND PRODU	43-013-31264	MONUMENT FED	08S	16E	35	INJW	N
INLAND PRODU	43-013-30605	MONUMENT BUT	08S	16E	35	INJW	N
INLAND PRODU	43-013-30624	STATE 5-36	08S	16E	36	INJW	N
INLAND PRODU	43-013-30592	STATE 1-36	08S	16E	36	INJW	N
INLAND PRODU	43-013-30787	12-32	08S	17E	32	INJW	Y
INLAND PRODU	43-013-31372	14A-28	08S	16E	28	INJW	N
INLAND PRODU	43-013-30779	FED 15-28	08S	16E	28	INJW	N
INLAND PRODU	43-013-31523	GILSONITE 14	08S	17E	32	INJW	Y
INLAND PRODU	43-013-31403	GILSONITE ST	08S	17E	32	INJW	Y
INLAND PRODU	43-013-30658	GILSONITE 7-	08S	17E	32	INJW	Y
JN EXPLORATI	43-043-30223	LOGAN FEDERA	03N	07E	26	INJD	N
MEDALLION EX	43-013-30372	ALTAMONT SWD	03S	06W	24	INJD	Y
✓MERIDIAN OIL	43-037-31112	NAV FED 4-1	39S	25E	4	INJW	N
→MERIDIAN OIL←	43-037-31321	14-4 NAV.FED	39S	25E	4	INJW	N
✓MERIDIAN OIL	43-037-31395	NAVAJO FEDER	39S	25E	4	INJW	N
✓MERIDIAN OIL	43-037-31259	FEDERAL 23-4	39S	25E	4	INJW	N
✓MERIDIAN OIL	43-037-31267	21-9 NAV.FED	39S	25E	9	INJW	N
✓MERIDIAN OIL	43-037-31298	HAVASU FED.	38S	23E	24	INJW	N
✓MERIDIAN OIL	43-037-31282	ARABIAN FED.	38S	24E	19	INJW	N
✓MERIDIAN OIL	43-037-31458	HAVASU FED.	38S	24E	19	INJW	N
MISSION OIL	43-013-31202	UTE 25-6	05S	04W	25	INJI	Y
MOBIL EXPLOR	43-037-16350	H-11	40S	24E	36	INJW	Y
MOBIL EXPLOR	43-037-15617	F-11	40S	24E	36	INJW	Y
MOBIL EXPLOR	43-037-15618	G-12	40S	24E	36	INJI	Y
MOBIL EXPLOR	43-037-15619	I-12	40S	24E	36	INJW	Y
MOBIL EXPLOR	43-037-16377	T-8	40S	25E	28	INJW	Y
MOBIL EXPLOR	43-037-16366	P-7	40S	25E	29	INJW	Y
MOBIL EXPLOR	43-037-16362	N-7	40S	25E	29	INJW	Y
MOBIL EXPLOR	43-037-16359	L-9	40S	25E	31	INJW	Y
MOBIL EXPLOR	43-037-16354	J-11	40S	25E	31	INJW	Y
MOBIL EXPLOR	43-037-15958	L-11	40S	25E	31	INJW	Y
✓MERIDIAN OIL	43-037-31317	NAV.FED. 43-5	39S	25E	4	INJW	N

*Kiva Unit*  
*Kiva Unit*  
*Kiva Unit*  
*Kiva Unit*  
*Kiva Unit*  
*Kachina Unit*  
*Kachina Unit*  
*Kachina Unit*

MERIDIAN OIL



September 10, 1996

State of Utah  
Division of Oil, Gas and Mining  
355-1594 West North Temple  
Salt Lake City, UT 84180

Re: Name Change from Meridian Oil Inc. to  
**Burlington Resources Oil & Gas Co.**

Gentlemen:

Please be advised effective July 11, 1996 Meridian Oil Inc. changed their name and address to:

Burlington Resources Oil & Gas Co.  
3300 North "A" St., Bldg. 6  
Midland, TX 79710-1810

Please see the attached list of wells that Burlington Resources operates in the State of Utah. If you should have any questions, please contact me at (303) 930-9393 or after September 30th at (915) 688-6800.

Sincerely,

BURLINGTON RESOURCES OIL & GAS CO.

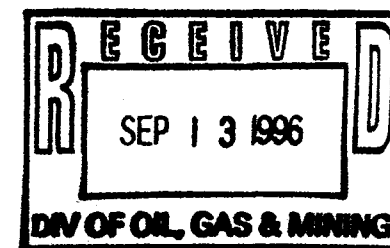
A handwritten signature in cursive script, appearing to read "Eileen Danni Dey".

Eileen Danni Dey  
Senior Regulatory Compliance Representative

Enclosure



FIELD	WELL NAME	WELL NO	FORMATION/POOL	COUNTY	OCATIO	SEC	TWN	RGE	API NUMBER	FEDERAL LEASE NUMBER	STATE CONTROL NO.
BANNOCK	BANNOCK FEDERAL	21-33	ISMAY	SAN JUAN	NENW	33	038S	024E	43-037-3142500	UTU60786A	10923
CEDAR MOUNTAIN	EAST CANYON UNIT	33-18	CEDAR MOUNTAIN	GRAND	NWSE	18	016S	025E	43-019-1620300	UTU05059	9515
EAST MOUNTAIN	EAST MOUNTAIN FEDERAL	13-35	FERRON	EMERY	NWSW	35	016S	006E	43-015-3023000	57287U6920	10789
EAST MOUNTAIN	EAST MOUNTAIN FEDERAL	32-23	FERRON	EMERY	SWNE	23	016S	006E	43-015-3023100	57287U6920	11075
FERRON	INDIAN CREEK UNIT	1	FERRON	EMERY	SWNW	02	017S	006E	43-015-3008200	57287U6920	02585
FERRON	INDIAN CREEK UNIT	3	FERRON	EMERY	SWSW	02	017S	006E	43-015-3107500	57287U6920 30175	02585
FERRON	INDIAN CREEK UNIT 10176	5	FERRON	EMERY	SENE	10	017S	006E	43-015-3011700	57287U6920	02585
FERRON	INDIAN CREEK UNIT 14176	2	FERRON	EMERY	SWNE	14	017S	006E	43-015-3009100	UTU15202	10907
KACHINA	ARABIAN FEDERAL (WIW)	2	ISMAY	SAN JUAN	NWSW	19	038S	024E	43-037-3128200	UTU56186	10654
KACHINA	ARABIAN FEDERAL	3	ISMAY	SAN JUAN	NESW	19	038S	024E	43-037-3128700	UTU56186	10654
KACHINA	HAVASU FEDERAL (WIW)	11-19	UPPER ISMAY	SAN JUAN	NWNW	19	038S	024E	43-037-3145800	UTU56186	10654
KACHINA	HAVASU FEDERAL	12-19	UPPER ISMAY	SAN JUAN	SWNW	19	038S	024E	43-037-3145700	UTU56186	10654
KACHINA	HAVASU FEDERAL	12-19A	ISMAY	SAN JUAN	SWNW	19	038S	024E	43-037-3145900	UTU56186	10654
KACHINA	HAVASU FEDERAL	22-19	UPPER ISMAY	SAN JUAN	SENE	19	038S	024E	43-037-3127800	UTU56186	10654
KACHINA	HAVASU FEDERAL	41-24	UPPER ISMAY	SAN JUAN	NENE	24	038S	023E	43-037-3127900	UTU20895	10654
KACHINA	HAVASU FEDERAL (WIW)	42-24	UPPER ISMAY	SAN JUAN	SENE	24	038S	023E	43-037-3129800	UTU20895	10654
KACHINA	WASH UNIT (WSEW)	2	CUTLER	SAN JUAN	SESE	13	038S	023E	43-037-3132400	UTU20894	10654
KIVA (DESERT CREEK)	NAVAJO FEDERAL	41-5	DESERT CREEK	SAN JUAN	NENE	05	039S	025E	43-037-3542100	UTU57895 31358	10810
KIVA (UPPER ISMAY)	KIVA FEDERAL	24-4	ISMAY	SAN JUAN	SESW	04	039S	025E	43-037-3174500	83687U6890	09975
KIVA (UPPER ISMAY)	NAVAJO FEDERAL (WIW)	12-4	ISMAY	SAN JUAN	SWNW	04	039S	025E	43-037-3139500	83687U6890	09975
KIVA (UPPER ISMAY)	NAVAJO FEDERAL (WIW)	14-4	ISMAY	SAN JUAN	SWSW	04	039S	025E	43-037-3132100	83687U6890	09975
KIVA (UPPER ISMAY)	NAVAJO FEDERAL (WIW)	21-9	ISMAY	SAN JUAN	NENW	09	039S	025E	43-037-3126700	83687U6890	09975
KIVA (UPPER ISMAY)	NAVAJO FEDERAL (WIW)	23-4	UPPER ISMAY	SAN JUAN	NESW	04	039S	025E	43-037-3125900	83687U6890	09975
KIVA (UPPER ISMAY)	NAVAJO FEDERAL	4-2	ISMAY	SAN JUAN	SWSE	04	039S	025E	43-037-3116100	83687U6890	09975
KIVA (UPPER ISMAY)	NAVAJO FEDERAL	4-4	ISMAY	SAN JUAN	NWSW	04	039S	025E	43-037-3117900	83687U6890	09975
KIVA (UPPER ISMAY)	NAVAJO FEDERAL	42-5	UPPER ISMAY	SAN JUAN	SENE	05	039S	025E	43-037-3126100	83687U6890	10655
KIVA (UPPER ISMAY)	NAVAJO FEDERAL (WSEW)	42-9	WINGATE/CUTLER	SAN JUAN	SENE	09	039S	025E	43-037-3126300	83687U6890	09975
KIVA (UPPER ISMAY)	NAVAJO FEDERAL	9-1	UPPER ISMAY	SAN JUAN	NWNE	09	039S	025E	43-037-3100100	83687U6890	09975
KIVA (UPPER ISMAY)	NAVAJO FEDERAL (WIW)	4-1	ISMAY	SAN JUAN	SESW	04	039S	025E	43-037-3111200	83687U6890	09975
KIVA (UPPER ISMAY)	NAVAJO FEDERAL (WIW)	43-5	ISMAY	SAN JUAN	NWSW	05	039S	025E	43-037-3131700	83687U6890	09975
LION MESA	HATCH POINT FEDERAL	27-1A	CANE CREEK	SAN JUAN	NESW	27	027S	021E	43-037-3051800	8910184250	02815

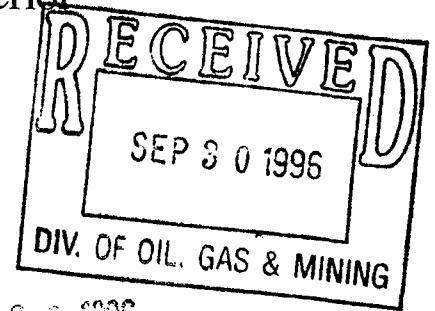




# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Utah State Office  
P.O. Box 45155  
Salt Lake City, UT 84145-0155



In Reply Refer To  
3100  
SL-071010C  
(UT-932)

SEP 28 1996

### NOTICE

Burlington Resources Oil & Gas Company	:	Oil and Gas
801 Cherry Street, Suite 900	:	SL-071010C
Fort Worth, Texas 76102	:	

#### Corporate Name Change Recognized

Acceptable evidence has been filed in this office concerning the corporate name change from Meridian Oil Inc. to Burlington Resources Oil & Gas Company.

For our purposes, the name change is recognized effective July 12, 1996, the date the Secretary of State of Delaware certified the name change.

The oil and gas lease files identified on the enclosed exhibit have been noted as to the name change. We are notifying the Minerals Management Service and all applicable Bureau of Land Management offices of the change by a copy of this notice. If additional documentation for changes of operator are required by our field offices, you will be contacted by them.

A rider to Bond No. 400IA9059 (BLM Bond No. MT0719) has been accepted by the Montana State office as of September 16, 1996, its date of receipt. The rider changed the name on the bond from Meridian Oil Inc. to Burlington Resources Oil & Gas Company.

**ROBERT LOPEZ**

Robert Lopez  
Group Leader,  
Minerals Adjudication Group

#### Enclosure

Exhibit (1 p)

cc: MMS, Data Management Division, P.O. Box 5860, MS 3113, Denver, Colorado 80217  
Moab District Office  
Vernal District Office

bc: State of Utah, ATTN: Lisha Cordova, Division of Oil, Gas and Mining, P.O. Box 145801,  
Salt Lake City, Utah 84114-5801  
Teresa Thompson (UT-931)  
Irene Anderson (UT-932)

Exhibit of Leases Affected

SL-071010C	U-8894A	U-40751	U-61752
SL-071595	U-8895A	U-45051	U-62143
U-0681	U-8897A	U-45929	U-62190
U-0683	U-15202	U-46825	U-63181
U-0684	U-15203	U-51045	UTU-64930
U-0685	U-15204	U-51046	UTU-64931
U-0719	U-16962A	U-51047	UTU-65329
U-0725	U-17024	U-52333	UTU-65607
U-0737	U-17623	U-56186	UTU-65750
U-0741	U-19281	U-56932	UTU-65751
U-0744	U-20016	U-56933	UTU-65868 (ROW)
U-03333	U-20895	U-56934	UTU-65940
U-04049	U-24606	U-57895	UTU-65943
U-04049A	U-39832	U-58728	UTU-66025
U-05059	U-40361	U-60428	UTU-66487
U-08107	U-40440	U-60520	UTU-66584
U-062420	U-40544 (ROW)	U-61556	UTU-66708
UTU-66830	UTU-66831	UTU-67565	UTU-67568
UTU-67569	UTU-67570	UTU-68232	UTU-68664
UTU-68676	UTU-69434	UTU-70115 (ROW)	UTU-70196
UTU-72660	U-60786X (Bannock Unit)	U-63089X (East Mountain Unit)	

**BURLINGTON RESOURCES  
MID-CONTINENT DIVISION**

**3300 NO. A STREET, BLDG. 6 (79705)  
P.O. BOX 51810  
MIDLAND, TEXAS 79710-1810**

**DRILLING DEPARTMENT  
FAX NO. 915/688-6007**

DATE:

10/30

TIME:

TO:

Lisha

FAX NO:

(801) 359-3940

CITY/STATE:

SLE, UT

FROM:

Eileen Day

PHONE:

(915) 688-9042

NO. OF PAGES (Including Cover Sheet):

3

SPECIAL INSTRUCTIONS:

Sorry so late!!Call me if you need  
anything else!

STATE OF UTAH  
DIVISION OF OIL, GAS AND MINING

## TRANSFER OF AUTHORITY TO INJECT - UIC FORM 5

Well name and number: \_\_\_\_\_

Field or Unit name: KIVA UNIT API no. \_\_\_\_\_Well location: Q0 \_\_\_\_\_ sections 459 township 39S range 25E county SAN JUANEffective Date of Transfer: 7/11/96

## CURRENT OPERATOR

Transfer approved by:

Name EILEEN DANNI DEY Company MERIDIAN OIL INC.Signature Eileen Danni Dey Address 5613 DTC PARKWAYTitle SR. REGULATORY COMPLIANCE REPRESENTATIVE ENGLEWOOD, CO 80111Date 10/30/96 Phone (303) 930-9393

Comments:

NAME CHANGE ONLY

## NEW OPERATOR

Transfer approved by:

Name EILEEN DANNI DEY Company BURLINGTON RESOURCES  
OIL & GAS COMPANYSignature Eileen Danni Dey Address P.O. BOX 51810Title SR. REGULATORY COMPLIANCE REP. MIDLAND, TEXAS 79705-1810Date 10/30/96 Phone (915) 688-9042

Comments:

Name change only

(State use only)

Transfer approved by [Signature] Title Environ. ManagerApproval Date 10-31-96\*961101 Appr. copy mailed to Burlington. Lc

# **OPERATOR CHANGE WORKSHEET**

Attach all documentation received by the division regarding this change.

Initial each listed item when completed. Write N/A if item is not applicable.

1-EC	6-EC
2-GL	7-KDR
3-DTS	8-SJ
4-VLD	9-FILE
5-RJF	

☒ Change of Operator (~~well sold~~)

☐ Designation of Agent

☐ Designation of Operator

☒ Operator Name Change ~~Only~~

The operator of the well(s) listed below has changed, effective: 7-11-96

TO: (new operator) BURLINGTON RESOURCES O&G CO.  
(address) 3300 N "A" ST BLDG 6

MIDLAND TX 79710-1810

EILEEN DANNI DEY

Phone: (915) 688-6800

Account no. N7670

FROM: (old operator) MERIDIAN OIL INC

(address) PO BOX 3209

ENGLEWOOD CO 80155-3209

EILEEN DANNI DEY

Phone: (303) 930-9393

Account no. N7230

WELL(S) attach additional page if needed:

**\*KACHINA, KIVA, EAST MOUNTAIN, BANNOCK UNIT'S**

Name: <b>**SEE ATTACHED**</b>	API: _____	Entity: _____	S _____	T _____	R _____	Lease: _____
Name: _____	API: _____	Entity: _____	S _____	T _____	R _____	Lease: _____
Name: _____	API: _____	Entity: _____	S _____	T _____	R _____	Lease: _____
Name: _____	API: _____	Entity: _____	S _____	T _____	R _____	Lease: _____
Name: _____	API: _____	Entity: _____	S _____	T _____	R _____	Lease: _____
Name: _____	API: _____	Entity: _____	S _____	T _____	R _____	Lease: _____
Name: _____	API: _____	Entity: _____	S _____	T _____	R _____	Lease: _____

## **OPERATOR CHANGE DOCUMENTATION**

- See 1. (r649-8-10) Sundry or other legal documentation has been received from the **FORMER** operator (attach to this form). (Rec'd 9-13-96)
- See 2. (r649-8-10) Sundry or other legal documentation has been received from the **NEW** operator (Attach to this form). (Rec'd 9-13-96)
- See 3. The Department of Commerce has been contacted if the new operator above is not currently operating any wells in Utah. Is the company registered with the state? (yes/no) \_\_\_\_ If yes, show company file number: #096593. (Eff. 1-29-82)
- See 4. **FOR INDIAN AND FEDERAL WELLS ONLY.** The BLM has been contacted regarding this change. Make note of BLM status in comments section of this form. BLM approval of Federal and Indian well operator changes should ordinarily take place prior to the division's approval, and before the completion of steps 5 through 9 below.
- See 5. Changes have been entered in the Oil and Gas Information System (3270) for each well listed above. (i. uic Program) (10-3-96)
- See 6. Cardex file has been updated for each well listed above. (10-3-96)
- See 7. Well file labels have been updated for each well listed above. (10-3-96)
- See 8. Changes have been included on the monthly "Operator, Address, and Account Changes" memo for distribution to Trust Lands, Sovereign Lands, UGS, Tax Commission, etc. (10-3-96)
- See 9. A folder has been set up for the Operator Change file, and a copy of this page has been placed there for reference during routing and processing of the original documents.

## ENTITY REVIEW

- Yes 1. (r649-8-7) Entity assignments have been reviewed for all wells listed above. Were entity changes made? (yes/no) no If entity assignments were changed, attach copies of Form 6, Entity Action Form.
- N/A 2. Trust Lands, Sovereign Lands, Tax Commission, etc., have been notified through normal procedures of entity changes.

## BOND VERIFICATION - (FEE WELLS ONLY) #961002 "Rider" 80,000 to Burlington rec'd by Trust Lands Admin.

- Yes 1. (r649-3-1) The NEW operator of any fee lease well listed above has furnished a proper bond.
- N/A 2. A copy of this form has been placed in the new and former operator's bond files.
- N/A 3. The FORMER operator has requested a release of liability from their bond (yes/no) \_\_\_\_\_, as of today's date \_\_\_\_\_. If yes, division response was made to this request by letter dated \_\_\_\_\_.

## LEASE INTEREST OWNER NOTIFICATION OF RESPONSIBILITY

- N/A 1. Copies of documents have been sent on \_\_\_\_\_ to \_\_\_\_\_ at Trust Lands for changes involving State leases, in order to remind that agency of their responsibility to review for proper bonding.  
OTS  
11/14/96

## FILMING

- VS 1. All attachments to this form have been microfilmed. Today's date: 12-27-96.

## FILING

- \_\_\_ 1. Copies of all attachments to this form have been filed in each well file.
- \_\_\_ 2. The original of this form, and the original attachments are now being filed in the Operator Change file.

## COMMENTS

STATE OF UTAH  
INVENTORY OF INJECTION WELLS

OPERATOR	API NO.	WELL	TNS	RGE	SE	WELLTYPE	INDIAN COUNT
*****	*****	*****	***	***	**	*****	*****
AMOCO PRODUC	43-043-30139	ISLAND RANCH	04N	07E	26	INJD	N
AMOCO PRODUC	43-043-30106	ANSCHUTZ RAN	04N	07E	34	INJD	N
AMOCO PRODUC	43-043-30209	AREU #W01-02	03N	07E	1	INJG	N
AMOCO PRODUC	43-043-30265	AREU #W02-10	03N	07E	2	INJG	N
AMOCO PRODUC	43-043-30167	AREU #W36-08	04N	07E	36	INJG	N
AMOCO PRODUC	43-043-30255	AREU #W36-14	04N	07E	36	INJG	N
AMOCO PRODUC	43-043-30272	AREU #W19-08	04N	08E	19	INJG	N
AMOCO PRODUC	43-043-30145	AREU #W20-14	04N	08E	20	INJG	N
AMOCO PRODUC	43-043-30154	AREU #W29-12	04N	08E	29	INJG	N
AMOCO PRODUC	43-043-30216	AREU #30-15	04N	08E	30	INJG	N
AMOCO PRODUC	43-043-30248	AREU #W30-12	04N	08E	30	INJG	N
AMOCO PRODUC	43-043-30185	AREU #W30-14	04N	08E	30	INJG	N
AMOCO PRODUC	43-043-30218	AREU #W30-02	04N	08E	30	INJG	N
AMOCO PRODUC	43-043-30280	AREU #W31-05	04N	08E	31	INJG	N
ANADARKO PET	43-007-30167	SHIMMIN TRUS	12S	10E	11	INJI	N
APACHE CORPO	43-037-16169	R-124	40S	25E	24	INJI	Y
APACHE CORPO	43-037-16462	T-316	40S	26E	16	INJI	Y
APACHE CORPO	43-037-16456	T-117	40S	26E	17	INJI	Y
APACHE CORPO	43-037-16188	V-117	40S	26E	17	INJI	Y
APACHE CORPO	43-037-16463	T-317	40S	26E	17	INJI	Y
APACHE CORPO	43-037-16457	T-118	40S	26E	18	INJI	Y
APACHE CORPO	43-037-16458	T-119	40S	26E	19	INJI	Y
APACHE CORPO	43-037-11267	U-421	40S	26E	21	INJI	Y
APACHE CORPO	43-037-16191	V-121	40S	26E	21	INJI	Y
APACHE CORPO	43-037-16194	V-321	40S	26E	21	INJI	Y
APACHE CORPO	43-037-16460	T-121	40S	26E	21	INJW	Y
APACHE CORPO	43-037-16179	T-322	40S	26E	22	INJW	Y
BALLARD & AS	43-037-31293	DEADMAN CANY	37S	24E	20	INJG	N
BARRETT RESO	43-013-15122	UTE #1-A	03S	06W	18	INJD	Y
BAYLESS, ROB	43-043-30198	AAGARD #28-2	03N	08E	28	INJD	N
BERRY VENTUR	43-047-30555	NATURAL DUCK	09S	20E	15	INJW	Y
BERRY VENTUR	43-047-30523	DUCKCREEK 5-	09S	20E	16	INJW	Y
BTA OIL PROD	43-043-30001	FORK D-10	03N	14E	14	INJD	N
BTA OIL PROD	43-043-20186	BRIDGER LAKE	03N	14E	23	INJG	N
BTA OIL PROD	43-043-20010	BRIDGER LAKE	03N	14E	25	INJG	N
BURLINGTON R	43-037-31321	14-4 NAV.FED	39S	25E	4	INJW	N
BURLINGTON R	43-037-31112	NAV FED 4-1	39S	25E	4	INJW	N
BURLINGTON R	43-037-31259	FEDERAL 23-4	39S	25E	4	INJW	N
BURLINGTON R	43-037-31395	NAVAJO FEDER	39S	25E	4	INJW	N
BURLINGTON R	43-037-31317	43-5 NAV.FED	39S	25E	5	INJW	Y
BURLINGTON R	43-037-31267	21-9 NAV.FED	39S	25E	9	INJW	N
BURLINGTON R	43-037-31298	HAVASU FED.	38S	23E	24	INJW	N
BURLINGTON R	43-037-31282	ARABIAN FED.	38S	24E	19	INJW	N
BURLINGTON R	43-037-31458	HAVASU FED.	38S	24E	19	INJW	N
CENTRAL RESO	43-037-31095	CAVE CANYON	38S	24E	3	INJW	N
CHANDLER & A	43-047-15083	WHITE RIVER	08S	22E	9	INJW	Y
CHANDLER & A	43-047-31356	22-20	08S	22E	20	INJW	Y
CHANDLER & A	43-047-32582	STATE 7-16	08S	22E	16	INJW	Y
CHANDLER & A	43-047-32583	GLEN BENCH S	08S	22E	16	INJW	Y
CHANDLER & A	43-047-32756	15-19-8-22	08S	22E	19	INJW	Y
CHEVRON USA	43-047-32306	GYPSUM HILLS	08S	21E	21	INJW	Y
CHEVRON USA	43-047-15219	RWU 100A	07S	22E	21	INJW	Y
CHEVRON USA	43-047-15301	RW #199 (43-	07S	22E	22	INJW	Y

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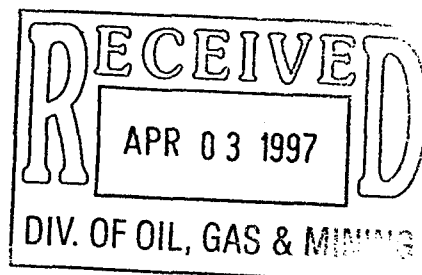
Kiva  
chg'd 5/97

Kachina  
chg'd 4/97



**MERIT ENERGY COMPANY**

12222 MERIT DRIVE, SUITE 1500  
DALLAS, TEXAS 75251  
(972) 701-8377  
(972) 960-1252 Fax



April 2, 1997

Utah Division of Oil, Gas and Mining  
Attn: Ms. Lisha Cordova  
1594 West North Temple  
Suite 1210  
Salt Lake City, Utah 84114


RE: Change of Operator to Merit Energy Company  
Emery and San Juan County

Dear Ms. Cordova:

Enclosed please find a copy of Form 3160 executed by both parties, Merit Energy and Burlington Resources.

If additional information or forms are required to process this transaction, please contact me at 972-701-8377.

Yours very truly,  
MERIT ENERGY COMPANY

  
Martha J. Rogers  
Manager, Regulatory Affairs

(June 1990)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires March 31, 1993

**SUNDRY NOTICES AND REPORTS ON WELLS**

Do not use this form for proposals to drill or to deepen or re-entry to a different reservoir.

Use "APPLICATION FOR PERMIT-" for such proposals.

**SUBMIT IN TRIPLICATE**

1. Type of Well

☐ Oil Well ☐ Gas Well ☒ Other

2. Name of Operator

MERIT ENERGY COMPANY

3. Address and Telephone No (972) 701-8377

12222 MERIT DRIVE, DALLAS, TX 75251

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

1150' FSL, 1110' FWL, SWSW

04 039S 025E, SLM

5. Lease Designation and Serial No.

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

83687U6890

8. Well Name and No.

NAVAJO FEDERAL 14-4

9. API Well No.

43,037,3132100

10. Field and Pool, or Exploratory Area

KIVA (UPPER ISMAY), ISMAY

11. County or Parish, State

SAN JUAN, UT

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

☐ Notice of Intent

☐ Subsequent Report

☐ Final Abandonment Notice

TYPE OF ACTION

☐ Abandonment

☐ Recompletion

☐ Plugging Back

☐ Casing Repair

☐ Altering Casing

☒ Other CHANGE OF  
OPERATOR

☐ Change of Plans

☐ New Construction

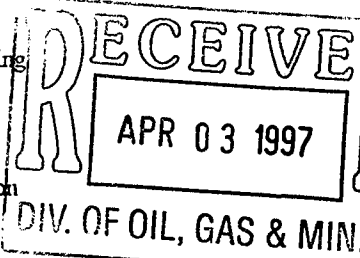
☐ Non-Routine Fracturing

☐ Water Shut-Off

☐ Conversion to Injection

☐ Dispose Water

(Note: Report results of multiple completion on Well  
Completion or Recompletion Report and Log form.)



13. Described Proposed or Completed Operations (Clearly state all pertinent details and give pertinent dates including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

EFFECTIVE AS OF JANUARY 1, 1997, BURLINGTON RESOURCES OIL & GAS COMPANY, THE PRIOR OPERATOR OF RECORD, TRANSFERRED ALL RIGHT, TITLE AND INTEREST IN THE NAVAJO FEDERAL 14-4 WELL TO MERIT PARTNERS, L.P. (AS TO 92.4%) AND MERIT ENERGY PARTNERS III, L.P. (AS TO 7.6%), C/O MERIT ENERGY COMPANY, 12222 MERIT DRIVE, DALLAS, TX 75251. ON APRIL 1, 1997, MERIT ENERGY COMPANY, THE GENERAL PARTNER FOR MERIT PARTNERS, L.P. AND MERIT ENERGY PARTNERS III, L.P., WILL TAKE OVER PHYSICAL OPERATIONS OF SAID WELL ON BEHALF OF SAID LIMITED PARTNERSHIPS AND IS CONSIDERED TO BE THE OPERATOR OF SAID WELL AS OF THAT DATE.

MERIT ENERGY COMPANY IS RESPONSIBLE UNDER THE TERMS AND CONDITIONS OF THE LEASE FOR THE OPERATIONS CONDUCTED UPON THE LEASED LANDS. BOND COVERAGE IN THE AMOUNT OF \$150,000 FOR MERIT ENERGY COMPANY IS PROVIDED UNDER BLM BOND NO. WY3011, IN FAVOR OF THE BUREAU OF LAND MANAGEMENT, U. S. DEPARTMENT OF THE INTERIOR.

14. I hereby certify that the foregoing is true and correct.

Signed

Martha Rogers

Title

Manager, Regulatory Affairs

Date

March 31, 1997

(This space for Federal or State office use)

Approved By

Title

Date

Condition of Approval, If any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statement or representations as to any matter within its jurisdiction.

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires March 31, 1993

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Use "APPLICATION FOR PERMIT-" for such proposals.

**SUBMIT IN TRIPLICATE**

1. Type of Well

☐ Oil Well ☐ Gas Well ☒ Other

2. Name of Operator

BURLINGTON RESOURCES OIL & GAS COMPANY

3. Address and Telephone No (915)688-6800

P. O. BOX 51810, MIDLAND, TX 79710-1810

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

1150' FSL, 1110' FWL, SWSW

04 039S 025E, SLM

5. Lease Designation and Serial No.

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation  
83687U6890

8. Well Name and No.

NAVAJO FEDERAL 14-4

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43,037,3132100

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☐ Notice of Intent

☐ Subsequent Report

☐ Final Abandonment Notice

TYPE OF ACTION

☐ Abandonment

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☐ Plugging Back

☐ Casing Repair

☐ Altering Casing

☒ Other CHANGE OF OPERATOR

☐ Change of Plans

☐ New Construction

☐ Non-Routine Fracturing

☐ Water Shut-Off

☐ Conversion to Injection

☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Described Proposed or Completed Operations (Clearly state all pertinent details and give pertinent dates including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

EFFECTIVE JANUARY 1, 1997, BURLINGTON RESOURCES OIL & GAS COMPANY, THE OPERATOR OF RECORD OF THE NAVAJO FEDERAL 14-4 WELL, TRANSFERRED ALL OF ITS RIGHT, TITLE AND INTEREST IN SAID WELL TO MERIT PARTNERS, L.P. (AS TO 92.4%) AND MERIT ENERGY PARTNERS III, L.P. (AS TO 7.6%), C/O MERIT ENERGY COMPANY, 12222 MERIT DRIVE, DALLAS, TX 75251.

ON APRIL 1, 1997, MERIT ENERGY COMPANY, GENERAL PARTNER FOR MERIT PARTNERS, L.P. AND MERIT ENERGY PARTNERS III, L.P., WILL TAKE OVER PHYSICAL OPERATIONS OF SAID WELL ON BEHALF OF SAID LIMITED PARTNERSHIPS.

14. I hereby certify that the foregoing is true and correct.

Signed

Kent Beers

Title

Attorney-in-Fact

Date

March 31, 1997

(This space for Federal or State office use)

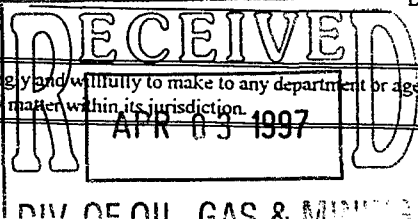
Approved By

Title

Date

Condition of Approval, If any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statement or representations as to any matter within its jurisdiction.



## CHANGE OF OPERATOR STATE OF - UT

COUNTY	FIELD NAME	WELL NAME	STR	LSE#	WELLTYPE	APIWELL	COMM NO.	FED CNTRL	ST CNTRL
EMERY	EAST MOUNTAIN ,FERRON	EAST MOUNTAIN FEDERAL 13-35	35 016S 006E	ML-27626	GAS WELL	43,015,3023000	UT060P49-87U69	57287U6920	025 <i>456933</i>
EMERY	EAST MOUNTAIN ,FERRON	EAST MOUNTAIN FEDERAL 32-23	23 016S 006E		GAS WELL	43,015,3023100	UT060P49-87U69	57287U6920	025 <i>417624</i>
EMERY	FERRON ,FERRON	INDIAN CREEK 021762 3	02 017S 006E	ML-27626	GAS WELL	43,015,3017500		57287U6920	025 <i>415204</i>
EMERY	FERRON ,FERRON	INDIAN CREEK 1	02 017S 006E	ML-27626	GAS WELL	43,015,3008200		57287U6920	025 <i>415206</i>
EMERY	FERRON ,FERRON	INDIAN CREEK 10176 5	10 017S 006E	ML-27626	GAS WELL	43,015,3011700		57287U6920	025 <i>415203</i>
EMERY	FERRON ,FERRON	INDIAN CREEK 14176 1	14 017S 006E	UTU15202	GAS WELL	43,015,3009100		UTU15202	109 <i>415202</i>
SAN JUAN	BANNOCK ,ISMAY	BANNOCK FEDERAL 21-33	33 038S 024E	UTU60786	OIL WELL	43,037,3142500	60786A	UTU60786A	109 <i>446361</i>
SAN JUAN	KACHINA ,CUTLER	WASH UNIT 2	13 038S 023E	UTU20894	WATER SOURCE	43,037,3132400		UTU20894	106 <i>420894 (To Water Rights 4-7-97)</i>
SAN JUAN	KACHINA ,ISMAY	ARABIAN FEDERAL 2	19 038S 024E	UTU56186	WATER INJECTED	43,037,3128200		UTU56186	106 <i>456186</i>
SAN JUAN	KACHINA ,ISMAY	HAVASU FEDERAL 11-19	19 038S 024E	UTU56186	WATER INJECTED	43,037,3145800		UTU56186	106 <i>456186</i>
SAN JUAN	KACHINA ,ISMAY	HAVASU FEDERAL 12-19	19 038S 024E	UTU56186	OIL WELL	43,037,3145700		UTU56186	106 <i>456186</i>
SAN JUAN	KACHINA ,ISMAY	HAVASU FEDERAL 12-19A	19 038S 024E	UTU56186	OIL WELL	43,037,3145900		UTU56186	106 <i>456186</i>
SAN JUAN	KACHINA ,ISMAY	HAVASU FEDERAL 22-19	19 038S 024E	UTU56186	OIL WELL	43,037,3127800		UTU56186	106 <i>456186</i>
SAN JUAN	KACHINA ,ISMAY	HAVASU FEDERAL 41-24	24 038S 023E	UTU20895	OIL WELL	43,037,3127900		UTU20895	106 <i>420895</i>
SAN JUAN	KACHINA ,ISMAY	HAVASU FEDERAL 42-24	24 038S 023E	UTU20895	WATER INJECTED	43,037,3129800		UTU20895	106 <i>420895</i>

## CHANGE OF OPERATOR STATE OF - UT

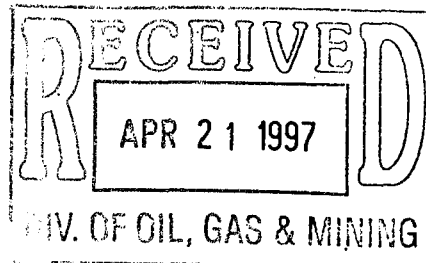
COUNTY	FIELD NAME	WELL NAME	STR	LSE#	WELLTYPE	APIWELL	COMM NO.	FED CNTRL	ST CNTRL
SAN JUAN	KACHINA, ISMAY-DESERT CREEK	ARABIAN FEDERAL 3	19 038S 024E	UTU58188	OIL WELL	43,037,3128700		UTU58188	106 <i>456186</i>
SAN JUAN	KIVA (UPPER ISMAY), CUTLER	NAVAJO FEDERAL 42-9	09 039S 025E	U-52333	WATER SOURCE	43,037,3126300			<i>452333 (to water rights 4-797)</i>
SAN JUAN	KIVA (UPPER ISMAY), ISMAY	KIVA FEDERAL 24-4	04 039S 025E		OIL WELL	43,037,3174500		83687U6890	099 <i>USA-452333</i>
SAN JUAN	KIVA (UPPER ISMAY), ISMAY	NAVAJO FEDERAL (WIV) 4-1	04 039S 025E		WATER INJECTED	43,037,3111200		83687U6890	099 <i>452333</i>
SAN JUAN	KIVA (UPPER ISMAY), ISMAY	NAVAJO FEDERAL (WIV) 43-5	04 039S 025E		WATER INJECTED	43,037,3131700		83687U6890	099 <i>458728</i>
SAN JUAN	KIVA (UPPER ISMAY), ISMAY	NAVAJO FEDERAL 12-4	04 039S 025E		WATER INJECTED	43,037,3139500		83687U6890	099 <i>452333</i>
SAN JUAN	KIVA (UPPER ISMAY), ISMAY	NAVAJO FEDERAL 14-4	04 039S 025E		WATER INJECTED	43,037,3132100		83687U6890	099 <i>452333</i>
SAN JUAN	KIVA (UPPER ISMAY), ISMAY	NAVAJO FEDERAL 21-9	09 039S 025E		WATER INJECTED	43,037,3126700		83687U6890	099 <i>452333</i>
SAN JUAN	KIVA (UPPER ISMAY), ISMAY	NAVAJO FEDERAL 23-4	04 039S 025E		WATER INJECTED	43,037,3125900		83687U6890	099 <i>452333</i>
SAN JUAN	KIVA (UPPER ISMAY), ISMAY	NAVAJO FEDERAL 4-1	04 039S 025E		OIL WELL	43,037,3111200		83687U6890	099 <i>452333</i>
SAN JUAN	KIVA (UPPER ISMAY), ISMAY	NAVAJO FEDERAL 4-2	04 039S 025E		OIL WELL	43,037,3116100		83687U6890	099 <i>452333</i>
SAN JUAN	KIVA (UPPER ISMAY), ISMAY	NAVAJO FEDERAL 4-4	04 039S 025E		OIL WELL	43,037,3117900		83687U6890	099 <i>452333</i>
SAN JUAN	KIVA (UPPER ISMAY), ISMAY	NAVAJO FEDERAL 42-6	05 039S 025E		OIL WELL	43,037,3128100		83687U6890	106 <i>458728</i>
SAN JUAN	KIVA (UPPER ISMAY), ISMAY	NAVAJO FEDERAL 43-5	04 039S 025E		OIL WELL	43,037,3131700		83687U6890	099 <i>458728</i>
SAN JUAN	KIVA (UPPER ISMAY), ISMAY	NAVAJO FEDERAL 9-1	09 039S 025E		OIL WELL	43,037,3100100		83687U6890	099 <i>452333</i>
SAN JUAN	KIVA (UPPER ISMAY), WINGATE	NAVAJO FEDERAL 42-9	09 039S 025E		WATER SOURCE	43,037,3126300		83687U6890	099 <i>452333 (to water rights 4-797)</i>

P.19/19

## CHANGE OF OPERATOR STATE OF - UT

COUNTY	FIELD NAME	WELL NAME	STR	LSE#	WELLTYPE	APIWELL	COMM NO.	FED CNTRL	ST CNTRL
SAN JUAN	KIVA, DESERT CREEK	NAVAJO FEDERAL 41-5	05 039S 025E	UTU57895	OIL WELL	43,037,3135800		UTU57895	108 <i>1157895</i>
SAN JUAN	LION MESA, CANE CREEK	HATCH POINT FEDERAL 27-1A	27 027S 021E	UTU20016	OIL WELL	43,037,3051800		UTU20016	028 <i>1120016</i>

STATE OF UTAH  
DIVISION OF OIL, GAS AND MINING



TRANSFER OF AUTHORITY TO INJECT - UIC FORM 5

Well name and number: NAVAJO FEDERAL #14-4  
Field or Unit name: KIVA (UPPER ISMAY) API no. 4303731321  
Well location: QQ SWSW section 4 township 39S range 25E county SAN JUAN  
Effective Date of Transfer: April 1, 1997

CURRENT OPERATOR

Transfer approved by:

Name EILEEN DANNI DEY Company BURLINGTON RESOURCES OIL & GAS  
Signature *Eileen Danni Dey* Address P.O. BOX 51810  
Title REGULATORY COMPLIANCE SUPERVISOR MIDLAND, TX 79710-1810  
Date 4-8-97 Phone (915) 688-9042

Comments: EFFECTIVE DATE OF SALE IS 1-1-97.  
EFFECTIVE DATE OF TRANSFER OF OPERATIONS IS 4-1-97..

NEH OPERATOR

Transfer approved by:

Name Martha J. Rogers Company Merit Energy Company  
Signature *Martha J. Rogers* Address 12222 Merit Dr.  
Title Manager, Regulatory Affairs Dallas, Texas 75251  
Date April 15, 1997 Phone (972) 701-8377

Comments: Eff. date of sale is 1/1/97 and the eff. date of transfer of  
operations is 4/1/97

(State use only)

Transfer approved by *[Signature]* Title *Executive Manager*  
Approval Date 6-2-97

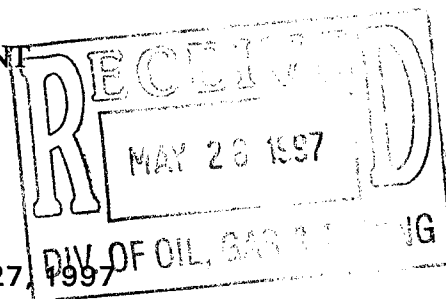
*\*Appr. Copy mailed 6-2-97. Jec*



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Utah State Office  
P.O. Box 45155  
Salt Lake City, UT 84145-0155



May 27, 1997

Merit Energy Company  
12222 Merit Drive, Suite 1500  
Dallas, Texas 75251

Re: Kiva (Upper Ismay) Unit  
San Juan County, Utah

Gentlemen:

On May 21, 1997, we received an indenture dated April 1, 1997, whereby Burlington Resources Oil and Gas Company resigned as Unit Operator and Merit Energy Company was designated as Successor Unit Operator for the Kiva (Upper Ismay) Unit, San Juan County, Utah.

The indenture was approved by all required parties and the signatory parties have complied with Sections 5 and 6 of the unit agreement. The instrument is hereby approved effective May 27, 1997. In approving this designation, the Authorized Officer neither warrants nor certifies that the designated party has obtained all required approval that would entitle it to conduct operations under Kiva (Upper Ismay) Unit Agreement.

Your nationwide (Wyoming) oil and gas bond No. 3011 will be used to cover all operations within the Kiva (Upper Ismay) Unit.

It is requested that you notify all interested parties of the change in unit operator. Copies of the approved instruments are being distributed to the appropriate federal offices, with one copy returned herewith.

Sincerely,

/s/ Robert A. Henricks

Robert A. Henricks  
Chief, Branch of Fluid Minerals

Enclosure

bcc: District Manager - Moab (w/enclosure)  
~~Division of Oil, Gas & Mining~~  
Minerals Adjudication Group U-932  
File - Kiva (Upper Ismay) Unit (w/enclosure)  
MMS - Data Management Division  
Agr. Sec. Chron  
Fluid Chron

U-931:TAThompson:tt:5/27/97



Well Status Report  
Utah State Office  
Bureau of Land Management

Lease Api Number Well Name QTR Section Township Range Well Status Operator

\*\* Inspection Item: 83687U6890

✓UTU52333	4303731395	12-4 NAVAJO-FEDERAL	SWNW	4	T39S	R25E	WIW	BURLINGTON RESOURCES O + G CO
✓UTU52333	4303731321	14-4 NAVAJO FED	SWSW	4	T39S	R25E	WIW	BURLINGTON RESOURCES O + G CO
✓UTU52333	4303731267	21-9 NAVAJO-FEDERAL	NENW	9	T39S	R25E	WIW	BURLINGTON RESOURCES O + G CO
✓UTU52333	4303731259	23-4 NAVAJO-FEDERAL	NESW	4	T39S	R25E	WIW	BURLINGTON RESOURCES O + G CO
✓UTU52333	4303731745	24-4 KIVAL FEDERAL	SESW	4	T39S	R25E	POW	BURLINGTON RESOURCES O + G CO
✓UTU52333	4303731112	4-1 NAVAJO FEDERAL	SESW	4	T39S	R25E	WIW	BURLINGTON RESOURCES O + G CO
✓UTU52333	4303731161	4-2 NAVAJO FEDERAL	SWSE	4	T39S	R25E	POW	BURLINGTON RESOURCES O + G CO
<del>UTU52333</del>	<del>4303731176</del>	<del>4-3 NAVAJO FEDERAL</del>	<del>NESW</del>	<del>4</del>	<del>T39S</del>	<del>R25E</del>	<del>P+A</del>	<del>BURLINGTON RESOURCES O + G CO</del>
✓UTU52333	4303731179	4-4 NAVAJO FEDERAL	NWSW	4	T39S	R25E	POW	BURLINGTON RESOURCES O + G CO
✓UTU58728	4303731261	42-5 NAVAJO-FEDERAL	SENE	5	T39S	R25E	POW	BURLINGTON RESOURCES O + G CO
<del>UTU52333</del>	<del>4303731263</del>	<del>42-9 NAVAJO-FEDERAL</del>	<del>SENE</del>	<del>9</del>	<del>T39S</del>	<del>R25E</del>	<del>WSW</del>	<del>BURLINGTON RESOURCES O + G CO</del>
✓UTU58728	4303731317	43-5 NAVAJO (BH 5)	NWSW	4	T39S	R25E	OSI	BURLINGTON RESOURCES O + G CO
✓UTU52333	4303731001	9-1 NAVAJO FEDERAL	NWNE	9	T39S	R25E	POW	BURLINGTON RESOURCES O + G CO

## OPERATOR CHANGE WORKSHEET

Attach all documentation received by the division regarding this change.

Initial each listed item when completed. Write N/A if item is not applicable.

1- <i>[initials]</i>	6- <i>[initials]</i>
2- <i>[initials]</i>	7-KAS <i>[initials]</i>
3-DTS <i>[initials]</i>	8-SI <i>[initials]</i>
4-VLD <i>[initials]</i>	9-FILE <i>[initials]</i>
5-JRB <i>[initials]</i>	

☒ Change of Operator (well sold)☐ Designation of Agent☐ Designation of Operator☐ Operator Name Change OnlyThe operator of the well(s) listed below has changed, effective: 4-1-97

TO: (new operator) MERIT ENERGY COMPANY  
 (address) 12222 MERIT DR STE 1500  
DALLAS TX 75251  
MARTHA ROGERS  
 Phone: (972) 701-8377  
 Account no. N4900 (4-30-97)

FROM: (old operator) BURLINGTON RESOURCES O&G  
 (address) 3300 N A ST BLDG 6  
MIDLAND TX 79710-1810  
MARALENE SPAWN  
 Phone: (915) 688-6800  
 Account no. N7670

WELL(S) attach additional page if needed:

\*KIVA (UPPER ISMAY) UNIT

Name: <b>**SEE ATTACHED**</b>	API: <u>43-087-31321</u>	Entity: _____	S _____	T _____	R _____	Lease: _____
Name: _____	API: _____	Entity: _____	S _____	T _____	R _____	Lease: _____
Name: _____	API: _____	Entity: _____	S _____	T _____	R _____	Lease: _____
Name: _____	API: _____	Entity: _____	S _____	T _____	R _____	Lease: _____
Name: _____	API: _____	Entity: _____	S _____	T _____	R _____	Lease: _____
Name: _____	API: _____	Entity: _____	S _____	T _____	R _____	Lease: _____
Name: _____	API: _____	Entity: _____	S _____	T _____	R _____	Lease: _____

## OPERATOR CHANGE DOCUMENTATION

- Lec* 1. (r649-8-10) Sundry or other legal documentation has been received from the FORMER operator (attach to this form). *(4-3-97) \*LIC 4-21-97*
- Lec* 2. (r649-8-10) Sundry or other legal documentation has been received from the NEW operator (Attach to this form). *(4-3-97) \*LIC 4-21-97*
- N/A* 3. The Department of Commerce has been contacted if the new operator above is not currently operating any wells in Utah. Is the company registered with the state? (yes/no) \_\_\_\_ If yes, show company file number: \_\_\_\_ *\*Kachina Unit chg'd 4-30-97.*
- Lec* 4. FOR INDIAN AND FEDERAL WELLS ONLY. The BLM has been contacted regarding this change. Make note of BLM status in comments section of this form. BLM approval of Federal and Indian well operator changes should ordinarily take place prior to the division's approval, and before the completion of steps 5 through 9 below.
- Lec* 5. Changes have been entered in the Oil and Gas Information System (3270) for each well listed above. *(5-30-97) \*LIC DBASE E. Quattro*
- Lec* 6. Cardex file has been updated for each well listed above. *(5-30-97)*
- Lec* 7. Well file labels have been updated for each well listed above. *(5-30-97)*
- Lec* 8. Changes have been included on the monthly "Operator, Address, and Account Changes" memo for distribution to Trust Lands, Sovereign Lands, UGS, Tax Commission, etc. *(5-30-97)*
- Lec* 9. A folder has been set up for the Operator Change file, and a copy of this page has been placed there for reference during routing and processing of the original documents.

## ENTITY REVIEW

- Sec 1. (r649-8-7) Entity assignments have been reviewed for all wells listed above. Were entity changes made? (yes/no) \_\_\_\_ If entity assignments were changed, attach copies of Form 6, Entity Action Form.  
*10655 to 9975 (Kiva Upper Ismay) entity.*
- Sec 2. Trust Lands, Sovereign Lands, Tax Commission, etc., have been **notified** through normal procedures of entity changes.

## BOND VERIFICATION - (FEE WELLS ONLY)

- NA/Sec 1. (r649-3-1) The **NEW** operator of any fee lease well listed above has furnished a proper bond.
- \_\_\_\_ 2. A **copy of this form** has been placed in the new and former operator's bond files.
- \_\_\_\_ 3. The **FORMER** operator has requested a release of liability from their bond (yes/no) \_\_\_\_, as of today's date \_\_\_\_\_. If yes, division response was made to this request by letter dated \_\_\_\_\_.

## LEASE INTEREST OWNER NOTIFICATION OF RESPONSIBILITY

- NA/Sec 1. Copies of documents have been sent on \_\_\_\_\_ to \_\_\_\_\_ at Trust Lands for changes involving State leases, in order to remind that agency of their responsibility to review for proper bonding.
- NA/Sec 2. (r649-2-10) The former operator of any fee lease wells listed above has been contacted and informed by letter dated \_\_\_\_\_ 19 \_\_\_\_, of their responsibility to notify all interest owners of this change.

## FILMING

- NA/Sec 1. All attachments to this form have been **microfilmed**. Today's date: 6.30.97.

## FILING

- \_\_\_\_ 1. Copies of all attachments to this form have been filed in each **well file**.
- \_\_\_\_ 2. The **original of this form**, and the **original attachments** are now being filed in the Operator Change file.

## COMMENTS

970430 Kachina Unit Op. Chg. Aprv. & changed. (Separate change)  
970530 Kiva Unit Op. chg. Aprv. 5-27-97.

(East Mtn. Unit & Bannock Unit Not Aprv. Yet - See separate chg.)  
when aprv.

STATE OF UTAH  
DIVISION OF OIL GAS AND MINING

## INJECTION WELL - PRESSURE TEST

Well Name: NAVAJO FEDERAL 14-4 API Number: 43-037-31321  
Qtr/Qtr: SW/SW Section: 4 Township: 39S Range: 25E  
Company Name: MERIT ENERGY COMPANY  
Lease: State \_\_\_\_\_ Fee \_\_\_\_\_ Federal X Indian \_\_\_\_\_  
Inspector: J THOMPSON Date: 8/31/99 9:15 AM

## Initial Conditions:

Tubing - Rate: \_\_\_\_\_ Pressure: 1450 psi

Casing/Tubing Annulus - Pressure: 0 psi

## Conditions During Test:

Time (Minutes)	Annulus Pressure	Tubing Pressure
0	<u>0</u>	<u>1450</u>
5	<u>1000</u>	<u>1450</u>
10	<u>1000</u>	<u>1450</u>
15	<u>1000</u>	<u>1450</u>
20	<u>1000</u>	<u>1450</u>
25	<u>1000</u>	<u>1450</u>
30	<u>1000</u>	<u>1450</u>

Results: Pass/Fail

## Conditions After Test:

Tubing Pressure: 1450 psi

Casing/Tubing Annulus Pressure: 0 psi

COMMENTS: \_\_\_\_\_

Bill Adams  
Operator Representative

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

UIC FORM 5

TRANSFER OF AUTHORITY TO INJECT

Well Name and Number Navajo Federal #14-4	API Number 4303731321
Location of Well Footage : 1150' FSL & 1110' FWL County : San Juan	Field or Unit Name Kiva (Upper Ismay) Unit
QQ, Section, Township, Range: SWSW 4 39S 25E State : UTAH	Lease Designation and Number UTU-52333

EFFECTIVE DATE OF TRANSFER: 9/30/00

CURRENT OPERATOR

Company: Merit Energy Company	Name: Arlene Valliquette
Address: 12222 Merit Drive, Suite 1500	Signature: <i>Arlene Valliquette</i>
city Dallas state TX zip 75251	Title: Manager - Regulatory Affairs
Phone: (972) 701-8377	Date: 9/29/00
Comments:	

NEW OPERATOR

Company: Journey Operating, L.L.C.	Name: Brian A. Baer
Address: 1201 Louisiana, Suite 1040	Signature: <i>Brian A. Baer</i>
city Houston state TX zip 77002	Title: President
Phone: (713) 655-0595	Date: 10/6/00
Comments:	

(This space for State use only)

Transfer approved by: *G. Hunt*  
Title: *Tech. Services Manager*

Approval Date: 11/9/01

Comments:

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL OIL WELL ☐ GAS WELL ☐ OTHER \_\_\_\_\_

2. NAME OF OPERATOR:  
Merit Energy Company

3. ADDRESS OF OPERATOR:  
12222 Merit Dr., Suite \_\_\_\_\_ CITY Dallas STATE TX ZIP 75251

PHONE NUMBER:  
(972) 701-8377

4. LOCATION OF WELL

FOOTAGES AT SURFACE: See Attached

COUNTY: San Juan

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: \_\_\_\_\_

STATE: UTAH

5. LEASE DESIGNATION AND SERIAL NUMBER:

See attached

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT or CA AGREEMENT NAME:

See attached

8. WELL NAME and NUMBER:

See attached

9. API NUMBER:

10. FIELD AND POOL, OR WILDCAT:

See attached

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: _____	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input checked="" type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
<input type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: _____	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> OTHER: _____
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Merit Energy Company advises, effective SEPT. 30, 2000, Journey Operating, L.L.C. will become the operator of the wells on the attached list.

Journey Operating, L.L.C.  
1201 Louisiana, Suite 1040  
Houston, TX. 77002  
(713) 655-0595

By: Brian A. Baer  
Brian A. Baer, President

RECEIVED

OCT 20 2000

DIVISION OF  
OIL, GAS AND MINING

NAME (PLEASE PRINT) Arlene Valliquette

TITLE Manager - Regulatory Affairs

SIGNATURE

Arlene Valliquette

DATE

9/29/00

(This space for State use only)

**CHANGE OF OPERATOR**  
**from Merit Energy Company to Journey Operating, L.L.C.**  
**San Juan County, Utah**

**Attachment to Utah Form 19**

Well Type	Lease Serial No.	Field Name	Well Name/Number	API Number	Location of Well
Oil Well	UTU-40361	Bannock	Bannock Federal #21-33	43-037-31425	NE NW (685' FNL & 1520' FWL) Sec. 33-T38S-R24E
Injection Well	I-149-IND-9123	Ismay	Ismay Flodine Park R-124	43-037-16169	NE NE (660' FNL & 660' FEL) Sec. 24-T40S-R25E
Oil Well	14-20-603-2055-A	Ismay	Ismay Flodine Park S-216	43-037-15546	SW NW (1820' FNL & 500' FWL) Sec. 16-T40S-R26E
Injection Well	14-20-603-2055-A	Ismay	Ismay Flodine Park T-316	43-037-16462	NE SW (1980' FSL & 1980' FWL) Sec. 16-T40S-R26E
Oil Well	14-20-603-2055-A	Ismay	Ismay Flodine Park S-416	43-037-15544	SW SW (1820' FNL & 500' FWL) Sec. 16-T40S-R26E
Oil Well	14-20-603-2055-A	Ismay	Ismay Flodine Park U-416	43-037-15545	SW SE (660' FSL & 1980' FEL) Sec. 16-T40S-R26E
Injection Well	I-149-IND-9124	Ismay	Ismay Flodine Park T-117	43-037-16456	NE NW (775' FNL & 1995' FWL) Sec. 17-T40S-R26E
Oil Well	I-149-IND-9124	Ismay	Ismay Flodine Park S-217	43-037-16170	SW NW (1980' FNL & 660' FWL) Sec. 17-T40S-R26E
Injection Well	I-149-IND-9124	Ismay	Ismay Flodine Park V-117	43-037-16188	NE NE (660' FNL & 660' FEL) Sec. 17-T40S-R26E
Oil Well	I-149-IND-9124	Ismay	Ismay Flodine Park U-217	43-037-16180	SW NE (1980' FNL & 1820' FEL) Sec. 17-T40S-R26E
Injection Well	I-149-IND-9124	Ismay	Ismay Flodine Park T-317	43-037-16463	NE SW (1980' FSL & 1980' FWL) Sec. 17-T40S-R26E
Oil Well	I-149-IND-9124	Ismay	Ismay Flodine Park U-417	43-037-16185	SW SE (500' FSL & 1820' FEL) Sec. 17-T40S-R26E
Injection Well	I-149-IND-9123	Ismay	Ismay Flodine Park T-118	43-037-16457	NE NW (660' FNL & 1980' FWL) Sec. 18-T40S-R26E
Oil Well	I-149-IND-9123	Ismay	Ismay Flodine Park S-218	43-037-16171	SW NW (1820' FNL & 660' FWL) Sec. 18-T40S-R26E
Oil Well	I-149-IND-9123	Ismay	Ismay Flodine Park T-318	43-037-16464	NE SE (1980' FSL & 1980' FWL) Sec. 18-T40S-R26E
Oil Well	I-149-IND-9123	Ismay	Ismay Flodine Park V-318	43-037-16467	NE SE (1980' FSL & 660' FEL) Sec. 18-T40S-R26E
Oil Well	I-149-IND-9123	Ismay	Ismay Flodine Park U-418	43-037-16186	SW SE (660' FSL & 1980' FEL) Sec. 18-T40S-R26E
Injection Well	I-149-IND-9123	Ismay	Ismay Flodine Park T-119	43-037-16458	NE NW (660' FNL & 1980' FWL) Sec. 19-T40S-R26E
Water Source Well	I-149-IND-9123	Ismay	Ismay Flodine Park V-219	43-037-16519	SE NE (1980' FNL & 560' FEL) Sec. 19-T40S-R26E
Oil Well	I-149-IND-9124	Ismay	Ismay Flodine Park V-120	43-037-16190	NE NE (660' FNL & 660' FEL) Sec. 20-T40S-R26E
Water Source Well	I-149-IND-9124	Ismay	Ismay Flodine Park V-220	43-037-20055	SE NE (1950' FNL & 1120' FEL) Sec. 20-T40S-R26E
Oil Well	I-149-IND-9124	Ismay	Ismay Flodine Park S-121	43-037-31629	NW NW (500' FNL & 660' FWL) Sec. 21-T40S-R26E
Injection Well	I-149-IND-9124	Ismay	Ismay Flodine Park T-121	43-037-16460	NE NW (610' FNL & 2050' FWL) Sec. 21-T40S-R26E
Water Source Well	I-149-IND-9124	Ismay	Ismay Flodine Park U-121	43-037-20056	NW NE (540' FNL & 1980' FEL) Sec. 21-T40S-R26E
Injection Well	I-149-IND-9124	Ismay	Ismay Flodine Park V-121	43-037-16191	NE NE (660' FNL & 660' FEL) Sec. 21-T40S-R26E
Injection Well	I-149-IND-9124	Ismay	Ismay Flodine Park U-421	43-037-11267	SW SE (660' FSL & 1980' FEL) Sec. 21-T40S-R26E
Injection Well	I-149-IND-9124	Ismay	Ismay Flodine Park V-321	43-037-16194	NE SE (1980' FSL & 670' FEL) Sec. 21-T40S-R26E

**CHANGE OF OPERATOR**  
**from Merit Energy Company to Journey Operating, L.L.C.**  
**San Juan County, Utah**

**Attachment to Utah Form 19**

Well Type	Lease Serial No.	Field Name	Well Name/Number	API Number	Location of Well
Oil Well	I-149-IND-9124	Ismay	Ismay Flodine Park S-222	43-037-16173	SW NW (2030' FNL & 820' FWL) Sec. 22-T40S-R26E
Injection Well	I-149-IND-9124	Ismay	Ismay Flodine Park T-322	43-037-16179	NE SW (1820' FSL & 1935' FWL) Sec. 22-T40S-26E
Oil Well	I-149-IND-9124	Ismay	Ismay Flodine Park U-422	43-037-16187	SW SE (820' FSL & 2140' FEL) Sec. 22-T40S-R26E
Oil Well	NOG-9904-1324	Ismay	Ismay Flodine Park S-227	43-037-16231	SW NW (2140' FNL & 820' FWL) Sec. 27-T40S-R26E
Oil Well	NOG-9904-1324	Ismay	Ismay Flodine Park U-127	43-037-31648	NE NE (745' FNL & 595' FEL) Sec. 27-T40S-R26E
Oil Well	NOG-9904-1324	Ismay	Ismay Flodine Park U-227	43-037-16234	SW NE (2120' FNL & 1950' FEL) Sec. 27-T40S-R26E
Oil Well	14-20-603-2058-A	Ismay	Ismay Flodine Park U-234	43-037-16184	SW NE (1980' FNL & 2080' FEL) Sec. 34-T40S-R26E
Water Source Well	UTU-20894	Kachina	Wash Unit #2	43-037-31324	SE SE (470' FSL & 850' FEL) Sec. 13-T38S-R23E
Oil Well	UTU-20895	Kachina	Havas Federal #41-24	43-037-31279	NE NE (1050' FNL & 500' FEL) Sec. 24-T38S-R23E
Injection Well	UTU-20895	Kachina	Havas Federal #42-24	43-037-31298	SE NE (1970' FNL & 461' FEL) Sec. 24-T38S-R23E
Injection Well	UTU-56186	Kachina	Arabian Federal #2	43-037-31282	NW SW (2180' FSL & 950' FWL) Sec. 19-T38S-R24E
Oil Well	UTU-56186	Kachina	Arabian Federal #3	43-037-31287	NE SW (1470' FSL & 1750' FWL) Sec. 19-T38S-R24E
Injection Well	UTU-56186	Kachina	Havas Federal #11-19	43-037-31458	NW NW (940' FNL & 590' FWL) Sec. 19-T38S-R24E
Oil Well	UTU-56186	Kachina	Havas Federal #12-19	43-037-31457	SW NW (1840' FNL & 410' FWL) Sec. 19-T38S-R24E
Oil Well	UTU-56186	Kachina	Havas Federal #12-19A	43-037-31459	SW NW (2520' FNL & 200' FWL) Sec. 19-T38S-R24E
Oil Well	UTU-56186	Kachina	Havas Federal #22-19	43-037-31278	SW NW (1850' FNL & 1255' FWL) Sec. 19-T38S-R24E
Injection Well	UTU-52333	Kiva	Navajo Federal #12-4	43-037-31395	SW NW (2260' FNL & 440' FWL) Sec. 4-T39S-R25E
Injection Well	UTU-52333	Kiva	Navajo Federal #14-4	43-037-31321	SW SW (1150' FSL & 1110' FWL) Sec. 4-T39S-R25E
Injection Well	UTU-52333	Kiva	Navajo Federal #23-4	43-037-31259	NE SW (1500' FSL & 2500' FWL) Sec. 4-T39S-R25E
Oil Well	UTU-52333	Kiva	Kiva Federal #24-4	43-037-31745	SE SW (1057' FSL & 1997' FWL) Sec. 4-T39S-R25E
Injection Well	UTU-52333	Kiva	Navajo Federal #4-1	43-037-31112	SE SW (370' FSL & 1940' FWL) Sec. 4-T39S-R25E
Oil Well	UTU-52333	Kiva	Navajo Federal #4-2	43-037-31161	SW SE (300' FSL & 2225' FEL) Sec. 4-T39S-R25E
Oil Well	UTU-52333	Kiva	Navajo Federal #4-4	43-037-31179	NW SW (1980' FSL & 660' FWL) Sec. 4-T39S-R25E
Oil Well	UTU-57895	Kiva	Navajo Federal #42-5	43-037-31261	SE NE (2130' FNL & 320' FEL) Sec. 5-T39S-R25E
Injection Well	UTU-58728	Kiva	Navajo Federal #43-5	43-037-31317	NE SE (1954' FSL & 627' FEL) Sec. 5-T39S-R25E
Oil Well	UTU-52333	Kiva	Navajo Federal #9-1	43-037-31001	NW NE (770' FNL & 2010' FEL) Sec. 9-T39S-R25E



**CHANGE OF OPERATOR**  
**from Merit Energy Company to Journey Operating, L.L.C.**  
**San Juan County, Utah**

**Attachment to Utah Form 19**

<b>Well Type</b>	<b>Lease Serial No.</b>	<b>Field Name</b>	<b>Well Name/Number</b>	<b>API Number</b>	<b>Location of Well</b>
Injection Well	UTU-52333	Kiva	Navajo Federal #21-9	43-037-31267	NE NW (330' FNL & 2510' FWL) Sec. 9-T39S-R25E
Water Source Well	UTU-52333	Kiva	Navajo Federal #42-9	43-037-31263	SE NE (1850' FNL & 1140' FEL) Sec. 9-T39S-R25E



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Utah State Office  
P.O. Box 45155  
Salt Lake City, UT 84145-0155

IN REPLY REFER TO  
UT-931

January 4, 2001

Journey Operating, L.L.C.  
Attn: Sandra Meche  
Louisiana Place  
1201 Louisiana Street  
Houston, Texas 77002

Re: Kiva (Upper Ismay) Unit  
San Juan County, Utah

Gentlemen:

We received an indenture dated September 30, 2000, whereby Merit Energy Company resigned as Unit Operator and Journey Operating, L.L.C. was designated as Successor Unit Operator for the Kiva (Upper Ismay) Unit, San Juan County, Utah.

This indenture was executed by all required parties and the signatory parties have complied with Sections 5 and 6 of the unit agreement. The instrument is hereby approved effective January 4, 2001. In approving this designation, the Authorized Officer neither warrants nor certifies that the designated party has obtained all required approval that would entitle it to conduct operations under the Kiva (Upper Ismay) Unit Agreement.

Your nationwide (Wyoming) oil and gas bond No. 3354 will be used to cover all operations within the Kiva (Upper Ismay) Unit.

It is requested that you notify all interested parties of the change in unit operator. Copies of the approved instruments are being distributed to the appropriate federal offices, with one copy returned herewith.

Sincerely,

/s/ Robert A. Henricks

Robert A. Henricks  
Chief, Branch of Fluid Minerals

Enclosure

bcc: Field Manager - Moab (w/enclosure)  
Division of Oil, Gas & Mining  
Minerals Adjudication Group U-932  
File - Kiva (Upper Ismay) Unit (w/enclosure)  
MMS - Data Management Division  
Agr. Sec. Chron  
Fluid Chron

UT931:TAThompson:tt:1/4/01

## Results of query for MMS Account Number 83687U6890

API Number	Operator	Well Name	Well Status	Lease or CA Number	Inspection Item	Township	Range	Section	Quarter/Quarter	Field Name	Production Zo
<u>4303731001</u>	MERIT ENERGY COMPANY	9-1 NAVAJO FEDERAL	POW	UTU52333	83687U6890	39S	25E	9	NWNE	KIVA	ISMAY
<u>4303731112</u>	MERIT ENERGY COMPANY	4-1 NAVAJO FEDERAL	WIW	UTU52333	83687U6890	39S	25E	4	SESW	KIVA	DESERT CREE
<u>4303731161</u>	MERIT ENERGY COMPANY	4-2 NAVAJO FEDERAL	POW	UTU52333	83687U6890	39S	25E	4	SWSE	KIVA	ISMAY
<del>4303731176</del>	<del>MERIT ENERGY COMPANY</del>	<del>4-3 NAVAJO FEDERAL</del>	P+A	UTU52333	83687U6890	39S	25E	4	NESW	KIVA	
<u>4303731179</u>	MERIT ENERGY COMPANY	4-4 NAVAJO FEDERAL	POW	UTU52333	83687U6890	39S	25E	4	NWSW	KIVA	ISMAY
<u>4303731259</u>	MERIT ENERGY COMPANY	23-4 NAVAJO-FEDERAL	TA	UTU52333	83687U6890	39S	25E	4	NESW	KIVA	ISMAY-DESER CREEK
<u>4303731261</u>	MERIT ENERGY COMPANY	42-5 NAVAJO-FEDERAL	POW	UTU58728	83687U6890	39S	25E	5	SENE	KIVA	ISMAY
<u>4303731263</u>	MERIT ENERGY COMPANY	42-9 NAVAJO-FEDERAL	WSW	UTU52333	83687U6890	39S	25E	9	SENE	KIVA	
<u>4303731267</u>	MERIT ENERGY COMPANY	21-9 NAVAJO-FEDERAL	WIW	UTU52333	83687U6890	39S	25E	9	NENW	KIVA	ISMAY

4303731317	MERIT ENERGY COMPANY	43-5 NAVAJO (BH 5)	OSI	UTU58728	83687U6890	39S	25E	4	NWSW	KIVA	ISMAY
4303731321	MERIT ENERGY COMPANY	14-4 NAVAJO FED	WIW	UTU52333	83687U6890	39S	25E	4	SWSW	KIVA	ISMAY
4303731395	MERIT ENERGY COMPANY	12-4 NAVAJO-FEDERAL	WIW	UTU52333	83687U6890	39S	25E	4	SWNW	KIVA	ISMAY
4303731745	MERIT ENERGY COMPANY	24-4 KIVAL FEDERAL	POW	UTU52333	83687U6890	39S	25E	4	SESW	KIVA	ISMAY

*DISCLAIMER for online data: No warranty is made by the BLM for use of the data for purposes not intended by the BLM.*

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 10/23/2000
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 10/23/2000
3. The new company has been checked through the **Department of Commerce, Division of Corporations Database** on: 01/05/2001

4. Is the new operator registered in the State of Utah: YES Business Number: 4822566-0161
5. If **NO**, the operator was contacted on: \_\_\_\_\_
6. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the (merger, name change, or operator change for all wells listed on Federal or Indian leases on: 01/04/2001
7. **Federal and Indian Units:** The BLM or BIA has approved the successor of unit operator for wells listed on: 01/04/2001
8. **Federal and Indian Communization Agreements ("CA"):** The BLM or the BIA has approved the operator change for all wells listed involved in a CA on: N/A
9. **Underground Injection Control ("UIC") Pro:** The Division has approved UIC Form 5, **Transfer of Authority to Inject**, for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: 01/08/2001

---

**DATA ENTRY:**

1. Changes entered in the **Oil and Gas Database** on: 01/05/2001
2. Changes have been entered on the **Monthly Operator Change Spread Sheet** on: 01/05/2001
3. Bond information entered in RBDMS on: N/A
4. Fee wells attached to bond in RBDMS on: N/A

---

**STATE BOND VERIFICATION:**

1. State well(s) covered by Bond No.: N/A

---

**FEE WELLS - BOND VERIFICATION/LEASE INTEREST OWNER NOTIFICATION:**

1. (R649-3-1) The **NEW** operator of any fee well(s) listed has furnished a bond: N/A
2. The **FORMER** operator has requested a release of liability from their bond on: N/A  
The Division sent response by letter on: N/A
3. (R649-2-10) The **FORMER** operator of the Fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: N/A

---

**FILMING:**

1. All attachments to this form have been **MICROFILMED** on: 2-21-01

---

**FILING:**

1. **ORIGINALS/COPIES** of all attachments pertaining to each individual well have been filled in each well file on: \_\_\_\_\_

---

**COMMENTS:**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Division of Oil, Gas and Mining  
**OPERATOR CHANGE WORKSHEET**

**ROUTING**

1. DJJ
2. CDW

**X Change of Operator (Well Sold)**

Operator Name Change/Merger

The operator of the well(s) listed below has changed, effective:

**6/9/2006**

<b>FROM: (Old Operator):</b> N1435-Journey Operating, LLC 201 Louisiana, Suite 1040 Houston, TX 77002 Phone: 1 (713) 655-0595	<b>TO: ( New Operator):</b> N0265-Citation Oil & Gas Corp 8223 Willow Place South Houston, TX 77070 Phone: 1 (281) 517-7800
---	---

WELL NAME	CA No.	SEC	TWN	RNG	Unit:	API NO	ENTITY NO	LEASE TYPE	KIVA	WELL TYPE	WELL STATUS
NAVAJO FEDERAL 9-1	09	390S	250E	4303731001	9975	Federal	OW	P			
NAVAJO FED 4-1	04	390S	250E	4303731112	9975	Federal	WI	A			
NAVAJO FEDERAL 4-2	04	390S	250E	4303731161	9975	Federal	OW	S			
NAVAJO FEDERAL 4-4	04	390S	250E	4303731179	9975	Federal	OW	P			
NAVAJO FED 23-4	04	390S	250E	4303731259	9975	Federal	WI	I			
NAVAJO FEDERAL 42-5	05	390S	250E	4303731261	9975	Federal	OW	S			
NAVAJO FEDERAL 42-9	09	390S	250E	4303731263	9975	Federal	WS	A			
NAVAJO FED 21-9	09	390S	250E	4303731267	9975	Federal	WI	A			
NAVAJO FED 43-5	04	390S	250E	4303731317	9975	Federal	WI	A			
NAVAJO FED 14-4	04	390S	250E	4303731321	9975	Federal	WI	A			
NAVAJO FED 12-4	04	390S	250E	4303731395	9975	Federal	WI	A			
24-4 KIVA FEDERAL	04	390S	250E	4303731745	9975	Federal	OW	P			

**OPERATOR CHANGES DOCUMENTATION**

Enter date after each listed item is completed

- (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 6/23/2006
- (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 6/23/2006
- The new company was checked on the **Department of Commerce, Division of Corporations Database** on: \_\_\_\_\_
- Is the new operator registered in the State of Utah: YES Business Number: 793304-0143
- (R649-9-2) Waste Management Plan has been received on: IN PLACE
- Inspections of LA PA state/fee well sites complete on: n/a
- Reports current for Production/Disposition & Sundries on: ok
- Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BLM 7/6/2006 BIA
- Federal and Indian Units:**  
The BLM or BIA has approved the successor of unit operator for wells listed on: 7/6/2006
- Federal and Indian Communization Agreements ("CA"):**  
The BLM or BIA has approved the operator for all wells listed within a CA on: n/a
- Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject**, for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: 6/30/2006

**DATA ENTRY:**

- Changes entered in the **Oil and Gas Database** on: 7/31/2006
- Changes have been entered on the **Monthly Operator Change Spread Sheet** on: 7/31/2006
- Bond information entered in RBDMS on: n/a
- Fee/State wells attached to bond in RBDMS on: n/a
- Injection Projects to new operator in RBDMS on: 7/31/2006
- Receipt of Acceptance of Drilling Procedures for APD/New on: n/a

**BOND VERIFICATION:**

- Federal well(s) covered by Bond Number: 104061650
- Indian well(s) covered by Bond Number: 104061656

**STATE OF UTAH**  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

## SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER _____		5. LEASE DESIGNATION AND SERIAL NUMBER: See Attached List
2. NAME OF OPERATOR: Journey Operating, L.L.C. <span style="float:right; font-size: 1.2em;">N 1435</span>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME: 
3. ADDRESS OF OPERATOR: 1201 Louisiana, Suite 1040 CITY Houston STATE TX ZIP 77002		7. UNIT or CA AGREEMENT NAME: See Attached List
4. LOCATION OF WELL FOOTAGES AT SURFACE: See Attached List		8. WELL NAME and NUMBER: See Attached List
PHONE NUMBER: (713) 655-0595		9. API NUMBER: See Attach
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: _____		10. FIELD AND POOL, OR WILDCAT: See Attached List
COUNTY: San Juan		STATE: UTAH

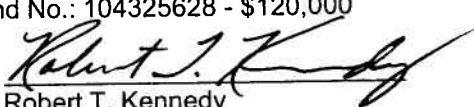
11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA			
TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate)  Approximate date work will start: _____  <input type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only)  Date of work completion: _____	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> ALTER CASING <input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> DEEPEN <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> NEW CONSTRUCTION <input checked="" type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> PLUG BACK <input type="checkbox"/> PRODUCTION (START/RESUME) <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	<input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> TEMPORARILY ABANDON <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> WATER SHUT-OFF <input type="checkbox"/> OTHER: _____

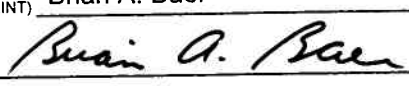
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Journey Operating, L.L.C. advises, effective June 9, 2006, Citation Oil & Gas Corp. will become the operator of the wells on the attached list.

Citation Oil & Gas Corp. (N0265)  
8223 Willow Place South  
Houston, TX 77070  
(281) 517-7800  
Bond No.: 104325628 - \$120,000

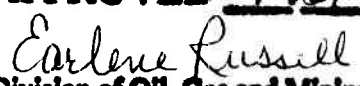
BLM BOND = 104061650  
BIA BOND = 104061656

By:   
Robert T. Kennedy  
Sr. Vice President Land

NAME (PLEASE PRINT) <u>Brian A. Baer</u>	TITLE <u>President</u>
SIGNATURE 	DATE <u>6/9/2006</u>

(This space for State use only)

**APPROVED** 7/13/2006

  
**Earlene Russell**  
Division of Oil, Gas and Mining  
Earlene Russell, Engineering Technician

**RECEIVED**

**JUN 23 2006**

DIV. OF OIL, GAS & MINING



STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

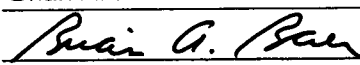
UIC FORM 5

TRANSFER OF AUTHORITY TO INJECT

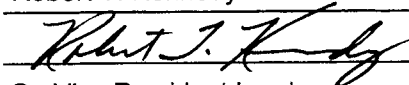
Well Name and Number Navajo Federal #14-4	API Number 4303731321
Location of Well Footage : 1150' FSL & 1110' FWL County : San Juan QQ, Section, Township, Range: SWSW 4 39S 25E State : UTAH	Field or Unit Name Kiva Lease Designation and Number UTU-52333

EFFECTIVE DATE OF TRANSFER: 6/9/2006

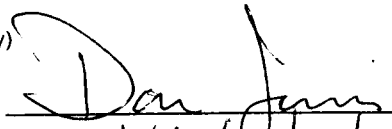
CURRENT OPERATOR

Company: Journey Operating, L.L.C.	Name: Brian A. Baer
Address: 1201 Louisiana, Suite 1040	Signature: 
city Houston state TX zip 77002	Title: President
Phone: (713) 655-0595	Date: 6/9/2006
Comments:	

NEW OPERATOR

Company: Citation Oil & Gas Corp.	Name: Robert T. Kennedy
Address: 8223 Willow Place South	Signature: 
city Houston state TX zip 77070	Title: Sr. Vice President Land
Phone: (281) 517-7800	Date: 6/9/2006
Comments:	

(This space for State use only)

Transfer approved by:   
Title: UIC Geologist

Approval Date: 6/30/06

Comments:

RECEIVED

JUN 23 2006

DIV. OF OIL, GAS & MINING

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <u>WI</u>		5. LEASE DESIGNATION AND SERIAL NUMBER: UTU-52333
2. NAME OF OPERATOR: Citation Oil & Gas Corp.		6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
3. ADDRESS OF OPERATOR: P O Box 690688 CITY Houston STATE TX ZIP 772691		7. UNIT or CA AGREEMENT NAME:
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1150' FSL & 1110' FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SWSW 4 39S 25E		8. WELL NAME and NUMBER: Navajo Federal 14-4
PHONE NUMBER: (281) 891-1569		9. API NUMBER: 4303731321
COUNTY: San Juan		10. FIELD AND POOL, OR WILDCAT: Kiva
STATE: UTAH		

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA			
TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: _____	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> ALTER CASING <input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input checked="" type="checkbox"/> CHANGE TUBING <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> DEEPEN <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> PLUG BACK <input type="checkbox"/> PRODUCTION (START/RESUME) <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	<input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> TEMPORARILY ABANDON <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> WATER SHUT-OFF <input type="checkbox"/> OTHER: _____
<input type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: _____			

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Citation Oil & Gas Corp. requests authorization to replace the 2-7/8" non-coated casing with 2-3/8" internally coated casing to try and reduce down time due to casing leaks.

COPY SENT TO OPERATOR

Date: 8-9-2012  
Initials: KS

RECEIVED

JUN 16 2012

DIV. OF OIL, GAS & MINING

NAME (PLEASE PRINT) <u>Mary Torres</u>	TITLE <u>Permitting Analyst</u>
SIGNATURE <u>Mary Torres</u>	DATE <u>6/12/2012</u>

(This space for State use only)

Approved by the  
Utah Division of  
Oil, Gas and Mining

Date: 8/8/12

By: Raym

condition - A mechanical Integrity test with  
shall be run after replacing the tubing.  
A 24 hr prior notice shall be given to  
the Division.

Federal Approval of this  
Action is Necessary



## RICHARDSON OPERATING COMPANY

4725 S. Monaco Street, Suite 200  
Denver, Colorado 80237  
(303) 830-8000 Fax (303) 830-8009

RECEIVED

AUG 02 2013

DIV. OF OIL, GAS & MINING

July 29, 2013

Attn: Zeke Clements  
Utah Division of Oil, Gas and Mining  
1594 West North Temple, Suite 1210  
Box 145801  
Salt Lake City, Utah 84114-5801

Re: Sundry Notices and Reports on Wells - Change of Operator and Transfers of Authority to Inject

Dear Zeke:

Enclosed for approval by the Utah Division of Oil, Gas and Mining, please find two originally executed Sundry Notices and Reports on Wells on Form 9, for the following 18 leases and wells (API # included):

<u>Lease #</u>	<u>Well Name</u>	<u>API Well No.</u>
UTU-20894	Wash Unit 2	43-037-31324 ✓
UTU-20895	Havasu-Federal 41-24	43-037-31279 ✓
UTU-20895	Havasu-Federal 42-24	43-037-31298 ✓
UTU-40361	Bannock -Fed 21-33	43-037-31425 ✓
UTU-52333	24-4 Kiva Federal	43-037-31745 ✓
UTU-52333	Navajo Federal 12-4	43-037-31395 ✓
UTU-52333	Navajo Federal 14-4	43-037-31321 ✓
UTU-52333	Navajo Federal 21-9	43-037-31267 ✓
UTU-52333	Navajo Federal 4-1	43-037-31112 ✓
UTU-52333	Navajo Federal 4-2	43-037-31161 ✓
UTU-52333	Navajo Federal 42-9	43-037-31263 ✓
UTU-52333	Navajo Federal 4-4	43-037-31179 ✓
UTU-52333	Navajo Federal 9-1	43-037-31001 ✓
UTU-56185	Arabian Federal 3	43-037-31287 ✓
UTU-56186	Havasu-Federal 11-19	43-037-31458 ✓
UTU-56186	Havasu-Federal 22-19	43-037-31278 ✓
UTU-58728	Navajo Federal 42-5	43-037-31261 ✓
UTU-58728	Navajo Federal 43-5	43-037-31317 ✓

APPROVED

AUG 19 2013

DIV. OIL GAS & MINING  
BY: Raehee Medina

Also enclosed for the approval by the Utah Division of Oil, Gas and Mining, please find one originally executed Transfer of Authority to Inject on Form UIC Form 5 for the following seven wells:

<u>Lease #</u>	<u>Well Name</u>	<u>API Well No.</u>
UTU-20895	Havasus-Federal 42-24	43-037-31298 ✓
UTU-52333	Navajo Federal 12-4	43-037-31395 ✓
UTU-52333	Navajo Federal 14-4	43-037-31321 ✓
UTU-52333	Navajo Federal 21-9	43-037-31267 ✓
UTU-52333	Navajo Federal 4-1	43-037-31112 ✓
UTU-56186	Havasus-Federal 11-19	43-037-31458 ✓
UTU-58728	Navajo Federal 43-5	43-037-31317 ✓

Please return the approved documents for each well to:

Richardson Operating Company  
4725 S. Monaco Street, Suite 200,  
Denver, Colorado 80237.

If you have any questions, please do not hesitate to contact me at the number above or via email at [land@richardsonoil.com](mailto:land@richardsonoil.com).

Sincerely,



Ann Barthrop  
Senior Land Analyst

Enclosures

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Div. of Oil, Gas & Mining

Division of Oil, Gas and Mining  
**OPERATOR CHANGE WORKSHEET (for state use only)**

ROUTING

CDW

**X - Change of Operator (Well Sold)**

Operator Name Change/Merger

The operator of the well(s) listed below has changed, effective:

**4/1/2013**

<b>FROM:</b> (Old Operator): N0265-Citation Oil & Gas Corp P O BOX 690688 Houston, TX. 77269  Phone: 1 (281) 891-1000	<b>TO:</b> ( New Operator): N2400-Richardson Operating Co. 4725 S Monaco Street, Suite 200 Denver, CO. 80237  Phone: 1 (303)830-8000
--	---

CA No.				Unit:	Kiva(Upper Mesa)			
WELL NAME	SEC TWN RNG			API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS
See Attached List								

**OPERATOR CHANGES DOCUMENTATION**

Enter date after each listed item is completed

- (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 8/2/2013
- (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 8/2/2013
- The new company was checked on the **Department of Commerce, Division of Corporations Database** on: 8/26/2013
- a. Is the new operator registered in the State of Utah:            Business Number: 8776630-0143
- a. (R649-9-2)Waste Management Plan has been received on: N/A
- b. Inspections of LA PA state/fee well sites complete on: N/A
- c. Reports current for Production/Disposition & Sundries on: 8/19/2013
- Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BLM Not Yet BIA N/A
- Federal and Indian Units:**  
The BLM or BIA has approved the successor of unit operator for wells listed on: Not Yet
- Federal and Indian Communization Agreements ("CA"):**  
The BLM or BIA has approved the operator for all wells listed within a CA on: Not Yet
- Underground Injection Control ("UIC")** Division has approved UIC Form 5 Transfer of Authority to **Inject**, for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: 8/7/2013

**DATA ENTRY:**

- Changes entered in the **Oil and Gas Database** on: 8/26/2013
- Changes have been entered on the **Monthly Operator Change Spread Sheet** on: 8/26/2013
- Bond information entered in RBDMS on: 8/26/2013
- Fee/State wells attached to bond in RBDMS on: N/A
- Injection Projects to new operator in RBDMS on: 8/26/2013
- Receipt of Acceptance of Drilling Procedures for APD/New on: N/A

**BOND VERIFICATION:**

- Federal well(s) covered by Bond Number: RLB0002500
- Indian well(s) covered by Bond Number: N/A
- a. (R649-3-1) The **NEW** operator of any state/fee well(s) listed covered by Bond Number N/A
- b. The **FORMER** operator has requested a release of liability from their bond on: N/A

**LEASE INTEREST OWNER NOTIFICATION:**

- (R649-2-10) The **NEW** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: N/A

**COMMENTS:**

Citation Oil & Gas Corp (N0265) to Richardson Operating Co. (N2400)  
Effective 1-April-2013

Well Name	Sec.	Township	Range	API No.	Utah Entity No.	Mineral Lease	Well Type	Well Status	Unit Name
						Type			
NAVAJO FEDERAL 9-1	09	390S	250E	4303731001	9975	Federal	Oil Well	Producing	KIVA (UPPER MESA)
NAVAJO FED 4-1	04	390S	250E	4303731112	9975	Federal	Water Injection	Active	KIVA (UPPER MESA)
NAVAJO FEDERAL 4-2	04	390S	250E	4303731161	9975	Federal	Oil Well	Producing	KIVA (UPPER MESA)
NAVAJO FEDERAL 4-4	04	390S	250E	4303731179	9975	Federal	Oil Well	Producing	KIVA (UPPER MESA)
NAVAJO FEDERAL 42-5	05	390S	250E	4303731261	9975	Federal	Oil Well	Producing	KIVA (UPPER MESA)
NAVAJO FEDERAL 42-9	09	390S	250E	4303731263	9975	Federal	Water Source	Active	KIVA (UPPER MESA)
NAVAJO FED 21-9	09	390S	250E	4303731267	9975	Federal	Water Injection	Active	KIVA (UPPER MESA)
NAVAJO FED 43-5	04	390S	250E	4303731317	9975	Federal	Water Injection	Active	KIVA (UPPER MESA)
NAVAJO FED 14-4	04	390S	250E	4303731321	9975	Federal	Water Injection	Active	KIVA (UPPER MESA)
NAVAJO FED 12-4	04	390S	250E	4303731395	9975	Federal	Water Injection	Plugged	KIVA (UPPER MESA)
24-4 KIVA FEDERAL	04	390S	250E	4303731745	9975	Federal	Oil Well	Producing	KIVA (UPPER MESA)

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <u>Change of Operator (SWD)</u>		5. LEASE DESIGNATION AND SERIAL NUMBER: Federal UTU-52333
2. NAME OF OPERATOR: Richardson Operating Company		6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A
3. ADDRESS OF OPERATOR: 4725 S Monaco St. Suite 200 CITY Denver STATE CO ZIP 80237		7. UNIT or CA AGREEMENT NAME: NA
PHONE NUMBER: (303) 830-8000		8. WELL NAME and NUMBER: NAVAJO FED 14-4
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1150 S 1110 W		9. API NUMBER: 037-31321
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SWSW 4 39S 25E		10. FIELD AND POOL, OR WILDCAT: KIVA
COUNTY: SAN JUAN		STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA			
TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: _____	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input checked="" type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
<input type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: _____	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> OTHER: _____
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Citation Oil & Gas Corp. has sold the captioned well to Richardson Operating Company and requests that they be named as Operator of Record effective 4/1/2013

Please release this well from coverage under Citation Oil & Gas Corp.'s Utah Statewide Bond # 104325628.

On behalf of Citation Oil & Gas Corp. I hereby certify that the foregoing is true and correct:

Sharon Ward Permitting Manager: Sharon Ward Date: 4/1/2013

By execution of this document, Richardson Operating Company requests the State of Utah to approve them as Operator of Record for the above captioned well and accepts responsibility for this well under it's Statewide Oil and Gas Lease Bond in favor of the United States Department of the Interior, Bureau of Land Management Bond # RLB0002500.

On behalf of Richardson Operating Company, I hereby certify that the foregoing is true and correct:	
NAME (PLEASE PRINT) <u>David B. Richardson, Jr.</u>	TITLE <u>President</u>
SIGNATURE <u>D.B. Richardson</u>	DATE <u>7-29-2013</u>

(This space for State use only)

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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APR 12 2013

UIC FORM 5

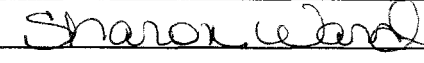
Div. of Oil, Gas & Mining

TRANSFER OF AUTHORITY TO INJECT

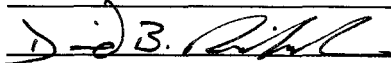
Well Name and Number NAVAJO FED 14-4	43-	API Number 03731321
Location of Well Footage : 1150 S 1110 W County : SAN JUAN QQ, Section, Township, Range: SW 4 39S 25E State : UTAH	Field or Unit Name KIVA Lease Designation and Number Federal UTU-52333	

EFFECTIVE DATE OF TRANSFER: 4/1/2013


CURRENT OPERATOR

Company: Citation Oil & Gas Corp.	Name: Sharon Ward
Address: 14077 Cutten Rd	Signature: 
city Houston state TX zip 77069-2212	Title: Permitting Manager
Phone: (281) 891-1000	Date: 4/1/2013
Comments:	

NEW OPERATOR

Company: Richardson Operating Company	Name: David B. Richardson, Jr.
Address: 4725 S Monaco St. Suite 200	Signature: 
city Denver state CO zip 80237	Title: President
Phone: (303) 830-8000	Date: 7-29-2013
Comments:	

(This space for State use only)

Transfer approved by:   
Title: UIC Geologist

Approval Date: 8/1/13

Comments:





## RICHARDSON OPERATING COMPANY

4725 S. Monaco Street, Suite 200  
Denver, Colorado 80237  
(303) 830-8000 Fax (303) 830-8009

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AUG 02 2013

DIV. OF OIL, GAS & MINING

July 29, 2013

Attn: Zeke Clements  
Utah Division of Oil, Gas and Mining  
1594 West North Temple, Suite 1210  
Box 145801  
Salt Lake City, Utah 84114-5801

Re: Sundry Notices and Reports on Wells - Change of Operator and Transfers of Authority to Inject

Dear Zeke:

Enclosed for approval by the Utah Division of Oil, Gas and Mining, please find two originally executed Sundry Notices and Reports on Wells on Form 9, for the following 18 leases and wells (API # included):

<u>Lease #</u>	<u>Well Name</u>	<u>API Well No.</u>
UTU-20894	Wash Unit 2	43-037-31324 ✓
UTU-20895	Havasus-Federal 41-24	43-037-31279 ✓
UTU-20895	Havasus-Federal 42-24	43-037-31298 ✓
UTU-40361	Bannock -Fed 21-33	43-037-31425 ✓
UTU-52333	24-4 Kiva Federal	43-037-31745 ✓
UTU-52333	Navajo Federal 12-4	43-037-31395 ✓
UTU-52333	Navajo Federal 14-4	43-037-31321 ✓
UTU-52333	Navajo Federal 21-9	43-037-31267 ✓
UTU-52333	Navajo Federal 4-1	43-037-31112 ✓
UTU-52333	Navajo Federal 4-2	43-037-31161 ✓
UTU-52333	Navajo Federal 42-9	43-037-31263 ✓
UTU-52333	Navajo Federal 4-4	43-037-31179 ✓
UTU-52333	Navajo Federal 9-1	43-037-31001 ✓
UTU-56185	Arabian Federal 3	43-037-31287 ✓
UTU-56186	Havasus-Federal 11-19	43-037-31458 ✓
UTU-56186	Havasus-Federal 22-19	43-037-31278 ✓
UTU-58728	Navajo Federal 42-5	43-037-31261 ✓
UTU-58728	Navajo Federal 43-5	43-037-31317 ✓

APPROVED

AUG 19 2013

DIV. OIL GAS & MINING  
BY: Raehee Medina

Also enclosed for the approval by the Utah Division of Oil, Gas and Mining, please find one originally executed Transfer of Authority to Inject on Form UIC Form 5 for the following seven wells:

<u>Lease #</u>	<u>Well Name</u>	<u>API Well No.</u>
UTU-20895	Havasus-Federal 42-24	43-037-31298 ✓
UTU-52333	Navajo Federal 12-4	43-037-31395 ✓
UTU-52333	Navajo Federal 14-4	43-037-31321 ✓
UTU-52333	Navajo Federal 21-9	43-037-31267 ✓
UTU-52333	Navajo Federal 4-1	43-037-31112 ✓
UTU-56186	Havasus-Federal 11-19	43-037-31458 ✓
UTU-58728	Navajo Federal 43-5	43-037-31317 ✓

Please return the approved documents for each well to:

Richardson Operating Company  
4725 S. Monaco Street, Suite 200,  
Denver, Colorado 80237.

If you have any questions, please do not hesitate to contact me at the number above or via email at [land@richardsonoil.com](mailto:land@richardsonoil.com).

Sincerely,



Ann Barthrop  
Senior Land Analyst

Enclosures

RECEIVED  
AUG 02 2013  
Div. of Oil, Gas & Mining

Division of Oil, Gas and Mining  
**OPERATOR CHANGE WORKSHEET (for state use only)**

ROUTING

CDW

**X - Change of Operator (Well Sold)**

Operator Name Change/Merger

The operator of the well(s) listed below has changed, effective:

**4/1/2013**

<b>FROM:</b> (Old Operator): N0265-Citation Oil & Gas Corp P O BOX 690688 Houston, TX. 77269  Phone: 1 (281) 891-1000	<b>TO:</b> ( New Operator): N2400-Richardson Operating Co. 4725 S Monaco Street, Suite 200 Denver, CO. 80237  Phone: 1 (303)830-8000
--	---

CA No.				Unit:	Kiva(Upper Mesa)			
WELL NAME	SEC TWN RNG			API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS
See Attached List								

**OPERATOR CHANGES DOCUMENTATION**

Enter date after each listed item is completed

- (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 8/2/2013
- (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 8/2/2013
- The new company was checked on the **Department of Commerce, Division of Corporations Database** on: 8/26/2013
- a. Is the new operator registered in the State of Utah:            Business Number: 8776630-0143
- a. (R649-9-2)Waste Management Plan has been received on: N/A
- b. Inspections of LA PA state/fee well sites complete on: N/A
- c. Reports current for Production/Disposition & Sundries on: 8/19/2013
- Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BLM Not Yet BIA N/A
- Federal and Indian Units:**  
The BLM or BIA has approved the successor of unit operator for wells listed on: Not Yet
- Federal and Indian Communization Agreements ("CA"):**  
The BLM or BIA has approved the operator for all wells listed within a CA on: Not Yet
- Underground Injection Control ("UIC")** Division has approved UIC Form 5 Transfer of Authority to **Inject**, for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: 8/7/2013

**DATA ENTRY:**

- Changes entered in the **Oil and Gas Database** on: 8/26/2013
- Changes have been entered on the **Monthly Operator Change Spread Sheet** on: 8/26/2013
- Bond information entered in RBDMS on: 8/26/2013
- Fee/State wells attached to bond in RBDMS on: N/A
- Injection Projects to new operator in RBDMS on: 8/26/2013
- Receipt of Acceptance of Drilling Procedures for APD/New on: N/A

**BOND VERIFICATION:**

- Federal well(s) covered by Bond Number: RLB0002500
- Indian well(s) covered by Bond Number: N/A
- a. (R649-3-1) The **NEW** operator of any state/fee well(s) listed covered by Bond Number N/A
- b. The **FORMER** operator has requested a release of liability from their bond on: N/A

**LEASE INTEREST OWNER NOTIFICATION:**

- (R649-2-10) The **NEW** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: N/A

**COMMENTS:**

Citation Oil & Gas Corp (N0265) to Richardson Operating Co. (N2400)  
Effective 1-April-2013

Well Name	Sec.	Township	Range	API No.	Utah Entity No.	Mineral Lease	Well Type	Well Status	Unit Name
						Type			
NAVAJO FEDERAL 9-1	09	390S	250E	4303731001	9975	Federal	Oil Well	Producing	KIVA (UPPER MESA)
NAVAJO FED 4-1	04	390S	250E	4303731112	9975	Federal	Water Injection	Active	KIVA (UPPER MESA)
NAVAJO FEDERAL 4-2	04	390S	250E	4303731161	9975	Federal	Oil Well	Producing	KIVA (UPPER MESA)
NAVAJO FEDERAL 4-4	04	390S	250E	4303731179	9975	Federal	Oil Well	Producing	KIVA (UPPER MESA)
NAVAJO FEDERAL 42-5	05	390S	250E	4303731261	9975	Federal	Oil Well	Producing	KIVA (UPPER MESA)
NAVAJO FEDERAL 42-9	09	390S	250E	4303731263	9975	Federal	Water Source	Active	KIVA (UPPER MESA)
NAVAJO FED 21-9	09	390S	250E	4303731267	9975	Federal	Water Injection	Active	KIVA (UPPER MESA)
NAVAJO FED 43-5	04	390S	250E	4303731317	9975	Federal	Water Injection	Active	KIVA (UPPER MESA)
NAVAJO FED 14-4	04	390S	250E	4303731321	9975	Federal	Water Injection	Active	KIVA (UPPER MESA)
NAVAJO FED 12-4	04	390S	250E	4303731395	9975	Federal	Water Injection	Plugged	KIVA (UPPER MESA)
24-4 KIVA FEDERAL	04	390S	250E	4303731745	9975	Federal	Oil Well	Producing	KIVA (UPPER MESA)

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

RECEIVED

AUG 12 2013

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <u>Change of Operator (SWD)</u>		5. LEASE DESIGNATION AND SERIAL NUMBER: Federal UTU-52333
2. NAME OF OPERATOR: Richardson Operating Company		6. IF INDIAN, ALLOTTEE OR TRIBE NAME: N/A
3. ADDRESS OF OPERATOR: 4725 S Monaco St. Suite 200 CITY Denver STATE CO ZIP 80237		7. UNIT or CA AGREEMENT NAME: NA
PHONE NUMBER: (303) 830-8000		8. WELL NAME and NUMBER: NAVAJO FED 14-4
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1150 S 1110 W		9. API NUMBER: 037-31321
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SWSW 4 39S 25E		10. FIELD AND POOL, OR WILDCAT: KIVA
COUNTY: SAN JUAN		STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA			
TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: _____	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input checked="" type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
<input type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: _____	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> OTHER: _____
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Citation Oil & Gas Corp. has sold the captioned well to Richardson Operating Company and requests that they be named as Operator of Record effective 4/1/2013

Please release this well from coverage under Citation Oil & Gas Corp.'s Utah Statewide Bond # 104325628.

On behalf of Citation Oil & Gas Corp. I hereby certify that the foregoing is true and correct:

Sharon Ward Permitting Manager: Sharon Ward Date: 4/1/2013

By execution of this document, Richardson Operating Company requests the State of Utah to approve them as Operator of Record for the above captioned well and accepts responsibility for this well under it's Statewide Oil and Gas Lease Bond in favor of the United States Department of the Interior, Bureau of Land Management Bond # RLB0002500.

On behalf of Richardson Operating Company, I hereby certify that the foregoing is true and correct:	
NAME (PLEASE PRINT) <u>David B. Richardson, Jr.</u>	TITLE <u>President</u>
SIGNATURE <u>D.B. Richardson</u>	DATE <u>7-29-2013</u>

(This space for State use only)

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

RECEIVED

APR 12 2013

UIC FORM 5

Div. of Oil, Gas & Mining


TRANSFER OF AUTHORITY TO INJECT

Well Name and Number NAVAJO FED 14-4	43-	API Number 03731321
Location of Well Footage : 1150 S 1110 W County : SAN JUAN QQ, Section, Township, Range: SW 4 39S 25E State : UTAH	Field or Unit Name KIVA Lease Designation and Number Federal UTU-52333	

EFFECTIVE DATE OF TRANSFER: 4/1/2013

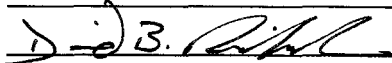
CURRENT OPERATOR

Company: Citation Oil & Gas Corp.  
Address: 14077 Cutten Rd  
city Houston state TX zip 77069-2212  
Phone: (281) 891-1000  
Comments:


Name: Sharon Ward  
Signature:   
Title: Permitting Manager  
Date: 4/1/2013

NEW OPERATOR

Company: Richardson Operating Company  
Address: 4725 S Monaco St. Suite 200  
city Denver state CO zip 80237  
Phone: (303) 830-8000  
Comments:

Name: David B. Richardson, Jr.  
Signature:   
Title: President  
Date: 7-29-2013

(This space for State use only)

Transfer approved by:   
Title: UIC Geologist

Approval Date: 8/1/13

Comments:



GARY R. HERBERT  
Governor

SPENCER J. COX  
Lieutenant Governor

# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

### Division of Oil, Gas and Mining

JOHN R. BAZA  
Division Director

March 3, 2016

Richardson Operating Co.  
4725 S Monoco St. suite 200  
Denver, CO 80237

SUBJECT: Pressure Test for Mechanical Integrity on Multiple Wells, San Juan County, Utah:

Gentlemen:

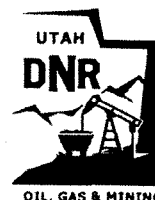
The Underground Injection Control Program, which the Division of Oil, Gas and Mining (DOGM) administers in Utah, requires that all Class II injection wells demonstrate mechanical integrity. Rule R649-5-5.3 of the Oil and Gas Conservation General Rules requires that the casing-tubing annulus above the packer be pressure tested at a pressure equal to the maximum authorized injection pressure or 1,000 psi, whichever is lesser, provided that no test pressure is less than 300 psi. This test shall be performed at least every five-year period beginning October 1982. The following wells now require a current test:

Navajo Fed 4-1,	API 43-037-31112
Havasus Fed 42-24,	API 43-037-31298
Navajo Fed 14-4,	API 43-037-31321
Havasus Fed 11-19,	API 43-037-31458

4 395 25E

Please make arrangements and ready wells for testing during the week of April, 25<sup>th</sup>, 2016, as outlined below:

1. Operator must furnish connections, and accurate pressure gauges, hot oil truck (or other means of pressuring annulus), along with personnel to assist in opening valves, etc.
2. The casing-tubing annulus shall be filled prior to the test date to expedite testing, as each well will be required to hold pressure for a minimum of 15 minutes.



3. If mechanical difficulties or workover operations make it impossible for the well(s) to be tested on this date the test(s) may be rescheduled.
4. Company personnel should meet a DOGM representative(s) at the field office or other location as negotiated.
5. All bradenhead valves with exception of the tubing on the injection well(s) must be shut-in 24 hours prior to testing.

Please contact me at (435) 820-8504 to arrange a meeting time and place or to negotiate a different date, if the date(s) specified is unacceptable.

Sincerely,



Mark Jones  
Environmental Scientist

mlj/dj/js

cc: Dan Jarvis, Operations Manager  
Well File



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0137  
Expires: October 31, 2014

**SUNDRY NOTICES AND REPORTS ON WELLS**  
**Do not use this form for proposals to drill or to re-enter an  
abandoned well. Use Form 3160-3 (APD) for such proposals.**

5. Lease Serial No.  
UTU-52333

6. If Indian, Allottee or Tribe Name

**SUBMIT IN TRIPLICATE – Other instructions on page 2.**

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator  
Richardson Operating Company

3a. Address  
4725 S. Monaco St. Ste. 200 Denver, CO 80237

3b. Phone No. (include area code)  
(303)830-8000

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
T: 39S R: 25E S: 4 SWSW

7. If Unit of CA/Agreement, Name and/or No.

8. Well Name and No.  
Navajo Federal 14-4

9. API Well No.  
43-037-31321

10. Field and Pool or Exploratory Area  
Kiva

11. County or Parish, State  
Garfield County, UT

**12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION			
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input checked="" type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other _____
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

RECEIVED

SEP 08 2016

DIV. OF OIL, GAS & MINING

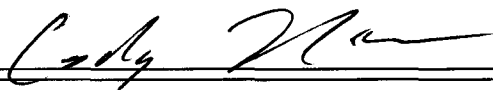
The intent of the sundry is to notify that the Navajo Federal 14-4 has been returned to an injecti status as of June 2nd, 2016.

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)

Cody Niehus

Title Geo Tech / Operations

Signature



Date 08/16/2016

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by

Title

Date

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)